TABLE II.B.5.b., Continued

Labor Force and Employment Status (In Thousands)

<del></del>	Total			Employed				•	
County	Population	Unemployment	Total	Manufacturing	Retail	Finance	Service	Farmer	Government
OTSEGO	15.8	0.7	4.7	1.1	1.2	0.2	1.3	0.1	0.7
OTTAWA	171.3	5.9	53.7	25.5	9.6	1.6	10.0	1.6	6.6
PRESQUE ISLE	13.9	1.1	1.8	0.2	0.5	0.1	0.4	0.3	0.8
ROSCOMMON	18.7	0.7	2.2	0.3	1.1	0,2	0.3	0.04	1.1
SAGINAW	216.4	9.2	74.1	25.9	16.8	₹.5	17.1	1.7	9.7
ST. CLAIR	140.5	7.0	29.8	9.3	7.5	1.3	6.3	1.3	5.9
ST. JOSEPH	59.6	2.5	16.7	9.4	2.8	0.5	1.9	1.0	2.6
SANILAC	40.3	2.0	7.5	3.6	1.4	0.4	1.0	1.8	1.6
SCHOOLCRAFT	8.3	0.7	1.3	0.3	0.4	0.1	0.3	0.1	0.6
SHIAWASSEE	69.0	3.4	12.2	4.4	3.3	0.5	2.3	1.4	2.8
TUSCOLA	55.1	2.8	8.0	2.4	2.1	0.4	1.4	1.5	2.3
VAN BUREN	67.3	3.1	11.9	4.6	2.7	0.4	2.4	1.5	3.1
WASHTENAW	266.0	7.0	105.0	39.2	22.2	4.2	27.0	1.3	12.2
WAYNE	2,164.3	89.3	699.0	220.6	128.1	43.3	191.3	0.4	110.9
WEXFORD	26.7	1.7	8.8	3.9	1.8	0.3	1.8	0.2	1.2

Source: U.S. Bureau of the Census, <u>County and City Data Book</u>, 1988, U.S. Government Printing Office, Washington, DC.

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<sup>(1) 20 - 99</sup> employees

<sup>(2) 500-999</sup> employees

<sup>(3) 100-249</sup> employees



1989 Michigan Tobacco Task Force Report



A Report of the 1989 Michigan Tobacco Reduction Task Force

January 1990

Michigan Department of Public Health Center for Health Promotion 2023673205







# **Foreword**

Every year in Michigan, more than 16,000 persons needlessly die from tobacco-related diseases, including heart disease, lung disease, and cancer. Thousands more

Raj M Wiener

fall ill or become disabled as a result of this addictive substance. Nevertheless, each year the tobacco industry must recruit more than 126,000 Michigan residents—90 percent of them children and adolescents—to replace tobacco users who quit or die from tobacco-related diseases or other causes.

To confront this threat to Michigan's health, I formed the Michigan Tobacco Reduction Task Force in early 1989. The specific charge to the 45 members of the Task Force was to develop strategies for cutting the use of tobacco in Michigan by 50 percent (from its present level of slightly less than 29 percent of adults) by the Year 2000.

This Task Force report, the result of many months of work by these concerned individuals, contains strong, creative, and comprehensive strategies designed to fight tobacco use on many fronts. It includes recommendations for:

- Preventing our children and adolescents from becoming addicted to tobacco
- Assisting present tobacco users to quit; and
- Protecting nonsmokers and children from the health dangers of environmental tobacco smoke and fires caused by smoking materials

Foreword

Tobacco-Free Michigan 2000 is part of a larger social movement in which many persons around the country are organizing to educate the public and lobby for strong antitobacco policies.

Achieving the goal of reducing tobacco use among our citizens (and eventually ending it altogether) will be one of the most important public health achievements of our lifetime. There can be no better legacy to present to the next generation than a state in which the avoidable disease and death caused by the use of cigarettes and smokeless tobacco has been eliminated.

I would like to thank every one of the Task Force members for their participation in this important effort. Such cooperation and commitment will be needed from groups and individuals across Michigan if we are to succeed in our goal of improving the health of all our citizens. I invite you to join in this important effort!

Raj M Wiener, Director Michigan Department of Public Health

# 2023673210

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The common goal shared by the members of the 1989 Michigan Tobacco Reduction Task Force was to develop recommendations for cutting the use of tobacco products in Michigan in half, from its current level of slightly less than 30 percent of the adult population to less than 15 percent, by the Year 2000. In an effort to fully understand the scope of this task, the members of the Task Force directed an intensive review of the existing body of literature concerning tobacco use. This review included a study of the health and economic effects of tobacco use, the patterns of tobacco use among Michigan and U.S. residents, and the social factors the influence the use and avoidance of tobacco products. The following is a summary of the Task Force's findings, followed by their major recommendations for reducing the use of tobacco products among Michigan residents.

# Health Consequences of Tobacco Use

During the past 25 years, knowledge of the health consequences of tobacco use has grown remarkably. Tobacco is now linewit to a host of fatal or debilitating diseases, including the major killers—heart disease and cancer.

During 1987, more than 16,000 persons in Michiga: wed from smoking-attributable causes. This figure includes deaths from

- heart disease and stroke:
- lung cancer and several other kinds of cancer;
- emphysema and other respiratory diseases; and
- conditions in infants due to maternal smoking during pregnancy.

This staggering death toll could be completely eliminated by avoiding the use of tobacco. Not only does this addictive drug threaten the health and lives of those who use it, it also threatens children and nonsmoking adults who are exposed to environmental tobacco smoke and cigarette-ignited files.

Blacks and other minorities experience higher rates of smoking-related disease and mortality than Whites. For instance, data for 1987 show that Blacks in Michigan had an 88 percent higher death rate from cerebrovascular disease and a 47 percent higher death rate from cancer of the lung and bronchus than Whites in the state.

Summary.

But, despite the vast knowledge of the health consequences of tobacco use, surveys continue to indicate that smokers are less aware than nonsmokers of these health effects. Furthermore, smokers and nonsmokers alike tend to underestimate the magnitude of the risk posed by tobacco use. In fact, the annual number of deaths due to tobacco use far surpasses the total combined deaths each year from AIDS, automobile accidents, homicides, suicides, and alcohol and illicit drug use.

# Economic Consequences of Tobacco Use

Tobacco use also leads to undesirable economic consequences for the State. Smoking-attributable costs in Michigan for the year 1987 totaled more than \$1.9 billion. These costs include medical expenses for the treatment of smoking-related disease, income lost due to inability to work because of smoking-related disease, and income foregone due to premature death from smoking-related disease.

The economic consequences of tobacco have a profound impact on the quality of life in Michigan because they limit the money that is available to residents for other uses, such as education, housing, recreation, or other social needs.

# Smoking Among Children and Adolescents

According to national data, about 19 percent of high school seniors are daily smokers. Although the data show an overall decline in smoking among high school seniors since 1975, they also reveal that smoking among young women with less than a high school education actually increased in recent years.

Studies indicate that children and adolescents are trying their first cigarettes at younger ages than in the past. Since research shows that persons who become addicted to tobacco at a young age are at higher risk for developing various smoking-related diseases in adulthood, smoking prevention and education efforts are needed early in life.

# Smoking Prevalence in Michigan

Smoking patterns in Michigan generally reflect those across the country. The prevalence of smoking is declining. The percentage of Michigan. residents who smoke fell from 32.4 percent in 1982 to 28.9 percent in 1987. During that period, the quit ratio among Michigan residents (i.e., the number of former smokers divided by the number of people who have ever smoked) increased by about 5 percent, reaching 44.3 percent.

smoked) NON Summary



If current trends continue during the next decade, however, 21.7 percent of Michigan residents will still smoke by the turn of the century. Clearly, existing efforts must be greatly increased to meet the goal of cutting tobacco use in Michigan among the adult population to 15 percent or less by the Year 2000.

# Population Groups at Special Risk

Certain population groups warrant special concern in tobacco reduction efforts. These groups include:

- Women. Smoking prevalence is decreasing more slowly among women than men, and fewer women than men have quit smoking. Surveys suggest that more girls than boys initiate smoking by the time of high school graduation.
- Pregnant Women. Pregnant women who are less than 20 years old, unmarried, or who have less than a high school education are smoking at higher rates than older, married, and more educated pregnant women.
- Blacks. The smoking rate of Blacks is higher than the rate of Whites, and a lower proportion of Black smokers have quit.
- Hispanics. The prevalence of smoking among Hispanic men
  is higher than among men in the general population. Although
  it is generally less common for Hispanic women to smoke
  than it is for women in the general population, the proportion
  of Hispanic women who use cigarettes may be on the increase.
- Persons with Low Educational Levels. There is an inverse relationship between smoking and educational level. Persons without a high school diploma smoke at a much higher rate than college graduates.
- Persons with Low Income. Smoking and income level also are inversely related. Michigan residents with incomes of less than \$10,000 are more likely to be smokers than those with higher incomes, and those smokers with lower incomes are less likely to quit smoking than those smokers with higher incomes.

# Smokeless Tobacco Use

During 1987, approximately 3 percent of the Michigan population used smokeless tobacco. These products, which are marketed as an alternative to cigarettes, have dangerous health consequences, including oral cancer, receding gums, and leukoplakia (white patches in the mouth that may be pre-cancerous). Virtually all smokeless tobacco users in the state are male, and most of them are White. The highest percentage of smokeless tobacco use by adults is found among those age 18 to 24 years old.

# Factors that Encourage Tobacco Use

Undoubtedly, the physically addictive nature of nicotine plays the most important role in the continuing use of cigarettes, smokeless tobacco, and other tobacco products. Nicotine makes it very difficult for the tobacco user to quit. In fact, the U.S. Surgeon General has compared the addictive quality of nicotine to that of heroin.

However, other factors also play an important role in supporting a user's tobacco habit. For example, family or other role models such as health professionals, teachers, or coaches can influence individuals, especially children, to take up or continue tobacco use. In addition, social norms that generally accept tobacco and provide convenient opportunities to use it will support continuation of these habits.

The advertising and promotional activities of the tobacco industry are also a significant force in encouraging the use of tobacco. Because each year the industry needs to replace 126,000 Michigan tobacco users who quit or die from tobacco and other causes, much of its efforts are focused upon persuading children and adolescents to join the ranks of smokers. Market analyses have shown that tobacco companies also attempt to maintain their sales figures by targeting advertising and promotional efforts at minorities, women, and people with lower levels of income and education.

Furthermore, the tobacco industry has significant political influence, which it uses to promote public policies designed to encourage the use of tobacco and to obstruct policies that would discourage its use.

# Factors that Discourage Tobacco Use

Just as some social factors encourage the use of tobacco, others discourage tobacco use. For instance, education campaigns alent the public to the dangers of tobacco use and help weaken the social norm defining tobacco use as an "acceptable" activity.

Common strategies include antitobacco media campaigns, such as the one sponsored by the Michigan Department of Public Health, which warns teens that "smoking stinks" and advises women —particularly minority women—"If at first you don't succeed, quit, quit again."

Community-based or state-wide promotional events, such as the American Cancer Society's "Great American Smoke-Out" and the American Lung Association's "Non-Dependence Day", also help raise public awareness of the importance of avoiding tobacco use. In Michigan, several community coalitions have acted as important vehicles for raising public consciousness of tobacco-related issues.

Social factors that discourage tobacco use also take other forms. Widespread availability of prevention and cessation programs and services for tobacco users helps convey a message about the addictive properties of nicotine and the undesirable nature of tobacco use. Primary prevention efforts mounted in the schools, both through the Michigan Model for Comprehensive School Health Education and through special promotional efforts like the "Smoke-Free Class of 2000" campaign sponsored by the major voluntary health associations, also help spread the word.

Tobacco cessation programs and services encompass a wide variety of approaches, including self-help materials, organized group activities, patient or client interventions by health professionals, and individual counseling sessions. More and more employers and unions are making cessation services accessible to their employees and members who use tobacco. Clearinghouses also serve as an important means of informing the public about the dangers of tobacco use and the availability of tobacco prevention and cessation services.

Other important ways to influence tobacco use are through the implementation of clean indoor air policies and regulations concerning the sale of tobacco products. Examples of such regulation in Michigan include the Michigan Clean Indoor Air Act and the Youth Tobacco Act.

Financial incentives or disincentives, such as reduced insurance premiums for nonsmokers and higher tobacco excise taxes, also can be used to discourage persons from starting or continuing tobacco habits. Increases in the price of tobacco products (which can be achieved through increases in excise taxes) have been shown to be particularly effective in deterring children and adolescents from purchasing tobacco products.

Summary.

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# Major Recommendations of the Task Force

The recommendations of the 1989 Michigan Tobacco Reduction Task Force are a comprehensive blueprint for cutting the use of tobacco products in Michigan in half by the Year 2000. The major recommendations of the Task Force include the following:

• Aggressive measures must be taken to prevent children and adolescents from gaining access to cigarettes, smokeless tobacco, and other tobacco products.

These measures should include treating the sale of tobacco in a similar fashion as the sale of alcohol (e.g. licensing vendors, requiring proof of age, eliminating sales from vending machines, and banning distribution of free samples); establishing tobacco excise taxes high enough to significantly reduce demand among children and adolescents; and restricting the location of tobacco advertising in order to reduce the exposure of children and adolescents to false and seductive messages.

• Stronger efforts must be made to protect Michigan residents from the adverse health effects of environmental tobacco smoke and from fires caused by smoking materials.

These efforts should include extending the protection of Michigan's Clean Indoor Air law from public sector work places to employees in the private sector; developing indoor air quality standards for environmental tobacco smoke; expanding the availability of non-smoking seating in restaurants; providing smoke-free living options in State supported or regulated residential facilities; and establishing a fire safety standard that requires cigarettes and cigars sold in Michigan to be self-extinguishing.

• Tobacco users must be offered information, assistance, and continued support for quitting and remaining tobacco-free. Special attention must be given to minorities, persons with low income, and other groups with high levels of use.

Physicians, dentists, nurses and other health professionals should make stronger efforts to identify patients or clients who smoke and to advise and assist them to quit; tobacco cessation services should be widely available and accessible to all Michigan citizens regardless of ability to pay; employers, unions and insurers should work cooperatively to establish worksite based cessation

programs; and clearinghouses should be used to assure that cessation services are publicized and widely known throughout the state.

• More vigorous efforts must be made to instill a tobacco-free lifestyle in the Michigan population.

Efforts should include expanded and sustained antitobacco media campaigns; improved school based education programs; and the prohibition of State facilities or agencies from manufacturing, selling or promoting tobacco products.

- Michigan's Congressional Delegation should be urged to introduce or support strong federal legislation and policies consistent with this report.
- All organizations and individuals concerned with the health of Michigan's citizens must share responsibility for helping implement the recommendations of this Task Force.

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CHAPTER 1

HEALTH AND ECONOMIC
CONSEQUENCES OF TOBACCO USE

# 2023673224

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3

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Since the publication of the first U.S. Surgeon General's report on smoking and health in 1964, a wealth of information has been gathered regarding the health consequences of tobacco use. The evidence confirms that there is a causal relationship between tobacco use and many fatal diseases. This chapter will discuss the health effects of tobacco use and the associated economic impact.

1

# Chapter Highlights:

- Cigarette smoking is the chief avoidable cause of death and disease in Michigan and the United States.
- During 1987, 16,417 Michigan adults died of smokingattributable illness. An additional 127 Michigan children under one year of age died that same year due to maternal smoking during pregnancy.
- Blacks experience higher incidence and mortality rates for most smoking-related diseases, as compared with the general population.
- Smoking-attributable illness and injury claim nearly 390,000
   Americans each year, more than the combined annual death totals for AIDS, automobile accidents, homicides, suicides, and the use of all illicit drugs and alcohol in the United States.
- Tobacco use is an addiction. Nicotine is the component of tobacco that causes the addiction.
- Smoking increases the risk of the following diseases or medical conditions:

Cancer of the lung
Cancer of the lip, mouth, and throat
Cancer of the bladder and kidney
Cancer of the pancreas
Cancer of the stomach
Cancer of the cervix
Ischemic heart disease
Cardiac arrest
Other heart disease
Atherosclerosis

Aortic aneurysm
Cerebrovascular disease and other vascular disease
Chronic obstructive pulmonary disease
Emphysema
Asthma, bronchitis, and pneumonia
Peptic ulcer

- Maternal smoking during pregnancy increases the risk of fetal, newborn, and infant death due to low birthweight, newborn respiratory conditions, respiratory distress syndrome, and sudden infant death syndrome (SIDS).
- The use of smokeless tobacco, particularly snuff, greatly increases the risk of oral cancer.
- Prolonged exposure to environmental tobacco smoke is associated with lung cancer in nonsmoking adults who live with smokers, and with increased frequency of respiratory problems in children who live with smokers.
- Cigarette-ignited fires are the leading cause of fire-related deaths in the United States.
- Surveys indicate that smokers are less aware than nonsmokers of the health consequences of tobacco use. Furthermore, both smokers and nonsmokers tend to underestimate the magnitude of the health risks posed by tobacco use.
- The harmful effects of tobacco use create undesirable economic consequences for individuals and society as a whole, such as medical expenses, income lost due to an inability to work, and income foregone due to premature death. During 1987, smoking-attributable costs in Michigan totaled more than \$1.9 billion.

# Health Consequences of Smoking

Cigarette smoking has been identified by the U.S. Surgeon General as the chief avoidable cause of death and disease in this country.

As background for the first U.S. Surgeon General's report, published in 1964, employees of the U.S. Department of Health and Human Services reviewed 7,000 available articles on smoking and health. Based upon this literature search, the Surgeon General's office found that cigarette smoking:

 was associated with a 70-percent increase in age-specific death rates for men; 2023673226

- was a cause of lung cancer in men and possibly women; and
- was associated with chronic bronchitis, emphysema, cancer of the larynx, coronary artery disease, cancer of the esophagus, cancer of the urinary bladder, low birthweight babies, and peptic ulcer.<sup>1</sup>

During the past 25 years, the store of information on links between smoking and disease has grown to the point that the Office on Smoking and Health of the U.S. Centers for Disease Control can reference more than 57,000 documents on smoking and health. The causal relationship between smoking and health has been established for a host of diseases, including the nation's major killers—heart disease and cancer.<sup>2</sup>

In the United States during 1985, there were 337,000 smoking-attributable deaths associated with the 10 major smoking-related diseases. Contrast this with 183,000 smoking-attributable deaths in 1965. After adjusting for population growth and the increasing age of the population, this 1985 figure amounts to a 27 percent increase in mortality during those 20 years. Smoking-attributable mortality among women increased more than 100 percent during that time, reflecting changes in smoking patterns for females.<sup>3</sup>

It is important to note that this tally of 337,000 smoking-attributable deaths does *not* include adult deaths from several other smoking-related diagnoses, infant deaths during the first 28 days after birth due to maternal smoking during pregnancy, smoking-attributable lung cancer deaths among nonsmokers exposed to environmental tobacco smoke, or deaths caused by smoking-initiated fires:

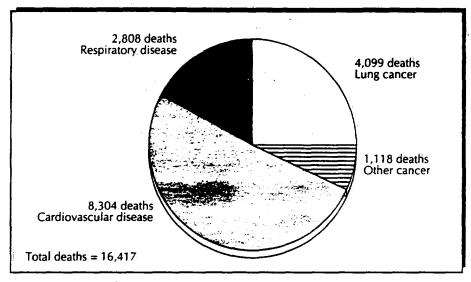
Inclusion of these factors raises the number of American deaths from smoking-attributable illness and injury during 1985 to an estimated 390,000.4 This number is greater than the *combined* annual death totals attributable to AIDS, automobile accidents, homicides, suicides, and the use of all illicit drugs and alcohol in the United States. The annual smoking-attributable death toll is more than the number of American military personnel who died during World War I, World War II, and the Vietnam War combined.5

Smoking-attributable morbidity and mortality rates have been calculated for Michigan using state data and a computer program, SAMMEC II.\* During 1987, 16,417 Michigan adults died from smoking-attributable illness.

<sup>\*</sup> The SAMMEC II (Smoking-Attributable Montality, Morbidity, and Economic Costs) software is available through the Centers for Disease Control of the U.S. Department of Health and Human Services. It allows individual states to calculate mortality, morbidity, and economic costs attributable to smoking. Estimates (except for perinatal mortality) are for adults aged 35 years and older, and calculations for different age and gender groups can be obtained.

That same year, Michigan also lost 127 infants and children under one year of age due to maternal smoking during pregnancy.<sup>6</sup> Figure 1 details smoking-attributable deaths by major disease categories.

Figure 1. Smoking-Attributable Deaths by Disease Category, Michigan Adults Aged 35 Years and Older, 1987



Source: SAMMEC II\*

#### Cancer

#### **Lung Cancer**

8

Lung cancer was a rare disease in the United States during the early 20th century. But that is not the case today. In fact, the rise in lung cancer incidence since the early 1900s has paralleled the increase in Americans' use of tobacco to the point where cancer of the lung is currently the leading cause of cancer mortality.

The tremendous impact of lung cancer can be seen when it is factored out of overall cancer mortality rates: Between 1950 and 1982, the death rate for all cancers increased 8 percent; without lung cancer, the rate would have decreased 13 percent during that time period.8

Smoking is the primary risk factor for the development of lung cancer. The 1989 U.S. Surgeon General's report on smoking and health indicated that current cigarette smokers have lung cancer mortality rates that are 11 times to 22 times greater than the rates of nonsmokers.<sup>9</sup>

Chapter 1

Research shows that the risk of developing lung cancer is related to the degree of lifetime exposure to tobacco smoke, as measured by the number of years as a smoker, the age of smoking initiation, the number of cigarettes smoked, and the typical depth of inhalation.<sup>10</sup>

)

The changing characteristics of cigarettes also may have an influence on lung cancer risks for smokers. It has been suggested that using filter-tip and lower-tar, lower-nicotine cigarettes may decrease the risk for lung cancer if the smoker does not change smoking habits to compensate for the lower levels of tar and nicotine. But some researchers have noted the possibility of increased danger with certain types of filter cigarettes because of deeper inhalation and the anesthetic effects of menthol. The risk of lung cancer is still significantly higher for smokers who use filter cigarettes than it is for those persons who have never smoked.<sup>11</sup>

Lung cancer also is linked to cigar and pipe smoking, although the risk is not as great as that from cigarette smoking. The finding that cigar and pipe smokers may be at lower risk of lung cancer may be due to the fact that cigar and pipe smokers tend to inhale their smoke less deeply than cigarette smokers.<sup>12</sup>

It has also been shown that smokers who are exposed on a regular basis to other airborne substances—such as certain occupational materials (i.e., asbestos) or indoor and outdoor air pollutants—face a higher risk of lung cancer than other smokers.<sup>13</sup>

Cigarette smokers who quit smoking can decrease their risk of lung cancer considerably. It has been estimated that former smokers who have not smoked for 15 years or more have only a slightly higher risk of lung cancer than nonsmokers. <sup>14,15,16</sup>

Whereas lung cancer mortality among White men has begun to level off, reflecting changes in smoking prevalence, lung cancer mortality among women and Black men has continued to increase since the 1930s. In fact, lung cancer now rivals breast cancer as the leading cause of cancer death among women.<sup>17</sup>

During 1987, smoking was responsible for 4,099 deaths from cancer of the lung, bronchus and trachea in Michigan. This represents more than 85 percent of all deaths from these cancers in the state during that year. 18

# Cancer of the Mouth, Throat, and Esophagus

Smoking has been causally related to cancer of the lip, oral cavity, pharynx, larynx, and esophagus. Table 1 lists the relative risks\* of current smokers developing cancers at these sites, based upon data from the Cancer Prevention Study II of the American Cancer Society.<sup>‡</sup>

The data show that men who currently smoke are more than 27 times more likely to die from cancer of the lip, oral cavity, and pharynx than men who do not smoke. In women, death from laryngeal cancer is almost 18 times more common among smokers than among nonsmokers. Relative risks for all cancers in this group are higher for smokers than nonsmokers.

Table 1. Estimated Relative Risks, by Gender, for Current Cigarette Smokers Developing Cancers of the Mouth, Throat, and Esophagus, U.S. Adults Aged 35 Years and Older, 1982-1986

Underlying Cause of Death	Males	Female
Lip, Oral Cavity, and Pharynx	27.48	5.59
Esophagus	7.60	10.25
Larynx	10.48	1 <i>7</i> .78

Source: American Cancer Society<sup>19</sup>

Pipe and cigar smokers experience roughly the same risks for cancer of the mouth, throat, and esophagus as do cigarette smokers, and the risks are directly related to length of smoking history, amount smoked, and depth of

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<sup>\*</sup> Relative risk describes the risk of dying or developing a disease due to exposure to a particular risk factor (in this case, tobacco), as compared to a group who has not been exposed. Relative risk is expressed as a ratio. Therefore, a relative risk of 1.0 would indicate an equal risk for smokers and nonsmokers. Relative risks greater than 1.0 indicate an increased risk for smokers.

<sup>&</sup>lt;sup>‡</sup> The Cancer Prevention Study II, a prospective study sponsored by the American Cancer Society, was conducted between 1982 and 1988 in all 50 states among 1.2 million persons. Subjects were predominantly White and tended to be more educated than the general U.S. population. As such, the results are more representative of middle-class White America than of the U.S. population as a whole. The data presented here are preliminary estimates taken from unpublished tabulations of the American Cancer Society.

inhalation. Smokers who quit for an extended period of time significantly reduce their risk for these cancers, relative to those persons who continue to smoke.<sup>20</sup>

Additionally, the combination of smoking and alcohol consumption has a synergistic effect on the risk for these cancers. The risk of developing oral, laryngeal, and pharyngeal cancer is much greater for persons who smoke heavily and consume excess amounts of alcohol—habits that are highly correlated—than it is for persons practicing either of these habits alone. 21,22

The use of smokeless tobacco, particularly moist snuff, is highly correlated with oral cancer. <sup>23,24</sup> Oral cancer has been found to be several times more common among users of snuff than among those persons who do not use snuff. For long-term snuff users, the excess risk for cancer of the cheek and gum may be almost fifty-fold. <sup>25</sup> The relationship between chewing tobacco and oral cancer is less clear.

In addition to cancer, studies have shown an association between smokeless tobacco use and receding gums (especially in the area of the mouth where the tobacco is placed), and smokeless tobacco use and leukoplakia (white patches that develop in the oral mucosa that may be precancerous).<sup>26</sup>

During 1987, 575 Michigan residents died of smoking-attributable cancer of the mouth, throat, and esophagus, accounting for 79 percent of all Michigan deaths from these cancers.<sup>27</sup>

#### **Bladder and Kidney Cancer**

A strong association exists between cigarette smoking and cancer of the bladder and kidney.<sup>28,29</sup>

Men who smoke are almost three times as likely to die from bladder or kidney cancer as men who do not smoke, while women who smoke are 1-1/2 times to 2-1/2 times as likely to die from these cancers as women who do not smoke.<sup>30</sup> The risk for bladder and kidney cancer increases with a higher lifetime exposure to tobacco smoke, and decreases with continued years of cessation.<sup>31</sup>

During 1987, there were 282 deaths in Michigan from smoking-attributable bladder and kidney cancer. This represented 37 percent of the state's 1987 mortality total for those cancers.<sup>32</sup>

#### Cancer of the Pancreas

Cigarette smoking has been identified as a major contributing factor in cases of pancreatic cancer.<sup>33</sup> In fact, the relative risk for this type of cancer is more than twice as high for smokers as for nonsmokers.<sup>34</sup> Most studies have recognized an increased risk for heavy smokers, as well as a decreasing risk for those smokers who quit.

During 1987, there were 219 deaths in Michigan from smoking-attributable pancreatic cancer. This represented 26 percent of all Michigan deaths from cancer of the pancreas for that year.<sup>35</sup>

#### **Stomach Cancer**

Although the association is weaker than it is for some other types of cancer, cigarette smoking also is associated with stomach cancer. A summary of studies on smoking and stomach cancer included in the 1982 U.S. Surgeon General's report on smoking and health indicated that cigarette smokers have higher rates of mortality from stomach cancer than nonsmokers, although these differences are small.<sup>36</sup> Recent studies also indicate higher mortality rates for heavier smokers relative to lighter smokers.<sup>37</sup>

Michigan-specific data on smoking-attributable deaths from stomach cancer are not available.

#### **Cervical Cancer**

The relationship between cervical cancer and tobacco use has been established only since 1977. Multiple studies have confirmed an increased risk of cervical cancer among women who smoke. A study by Slattery et al., published in 1989, indicated that current smokers face almost twice as high a risk for cervical cancer as nonsmokers, <sup>38</sup> although other studies have indicated that the amount of increased risk of cervical cancer faced by current smokers is not quite this great. <sup>39</sup>

A relationship between smoking and cervical dysplasia (considered to be a precursor lesion to cancer of the cervix) also has been noted. 40

During 1987, 42 Michigan women died as a result of smoking-attributable cervical cancer. These deaths accounted for 31 percent of all Michigan cervical cancer deaths during that year. 41



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#### Cardiovascular Diseases

#### Coronary Heart Disease

Coronary heart disease describes conditions and events that result in decreased blood and oxygen supply to the heart. These include, among others: *myocardial infarction* (commonly known as "heart attack"), which causes permanent destruction of heart tissue; and *ischemic heart disease*, which compromises the functioning of the heart, causes debilitating symptoms such as angina pectoris (chest pain), and may lead to permanent damage through myocardial infarction. According to the U.S. Surgeon General, the majority of adult deaths that are sudden and unexpected are due to severe coronary heart disease.<sup>42</sup>

Many factors combine to increase the risk of coronary heart disease, but the major risk factors are cigarette smoking, high blood cholesterol levels, and high blood pressure. Smoking may act either independently or interactively with these other factors to increase the risk of coronary heart disease. However, because cigarette smoking is present in a larger percentage of the population than any of these other risk factors, it stands as the major preventable cause of coronary heart disease in this country. (There apparently is no increased risk of heart disease for persons who smoke only cigars or pipes.")

Current smokers are two times to three times more likely than non-smokers to die from coronary heart disease. The risk of death from coronary heart disease increases for heavier smokers and for those persons with a greater lifetime exposure to tobacco smoke.<sup>45</sup> Furthermore, cigarette smoking also has been shown to compromise the effectiveness of certain medications used to treat heart disease.<sup>46</sup>

By quitting smoking, a person can reduce his or her risk of dying from coronary heart disease. According to the 1983 Surgeon General's report on smoking and health, former smokers who consumed less than one pack of cigarettes per day in the past and who have not smoked for at least 10 years have reduced their risk for coronary heart disease to the level for lifelong nonsmokers. For those former smokers who smoked more heavily in the past, the risk after 10 years of being smoke-free is still reduced, although to a lesser extent. Smoking lower-tar, lower-nicotine cigarettes does not seem to reduce a current smoker's risk for myocardial infarction.

The incidence of coronary heart disease is lower for women than for men, a finding that probably reflects women's lower smoking prevalence and lighter smoking habits.<sup>49</sup> However, the risk for myocardial infarction is 10 times greater for women who smoke *and* use oral contraceptives than it is for women who do neither.<sup>50</sup>

During 1987, 6,230 Michigan residents died from smoking-attributable heart disease. This represented 22 percent of all Michigan deaths from ischemic heart disease (4,593 deaths), and 20 percent of all deaths from other heart diseases, including cardiac arrest, rheumatic heart disease, and pulmonary heart disease (1,637 deaths).<sup>51</sup>

#### Arteriosclerosis

Arteriosclerosis refers to a thickening or hardening of the arteries. This condition results in reduced blood flow to the heart, thereby increasing the risk of coronary heart disease, including myocardial infarction ("heart attack") and sudden cardiac death.

Studies have shown a significant positive relationship between smoking and atherosclerosis (a form of blocked arteries caused by deposits that build up on the artery walls).<sup>52</sup>

During 1987, there were 447 deaths in Michigan from smoking-attributable atherosclerosis. These deaths represented 38 percent of all Michigan deaths from this condition during that year.<sup>53</sup>

#### Atherosclerotic Aortic Aneurysm

An aneurysm is a bailooning of the wall of the aorta caused by a destruction of the components of the wall. Rupture of an aortic aneurysm can be fatal. The most common cause of aortic aneurysm is atherosclerosis, or the deterioration of the aortic wall by deposits that build up on the walls. Studies have shown that death from ruptured aortic aneurysm is more common among smokers than among nonsmokers.<sup>54</sup>

During 1987, 308 persons died in Michigan from smoking-attributable aortic aneurysm, accounting for 47 percent of all Michigan deaths from this condition for that year.<sup>55</sup>

#### Cerebrovascular Disease

Cerebrovascular disease (commonly referred to as "stroke") describes the condition of reduced blood flow to the brain. This may be caused by a blocked blood vessel or by pressure from bleeding within the cranium itself. Reduced blood flow may result in permanent damage or transient effects, and may be fatal or nonfatal.

As with coronary heart disease, several risk factors contribute to the development of cerebrovascular disease. However, a study by Wolf et al. concluded that there is a causal relationship between smoking and stroke, 56

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and other studies have confirmed that smoking is an independent risk factor for this condition.<sup>57</sup>

Current smokers are almost two times to five times more likely to die from cerebrovascular disease than nonsmokers. The risk for stroke increases with the number of cigarettes smoked and decreases dramatically after the smoker quits smoking. There is a high degree of association between smoking and strokes in younger persons. The risk for stroke diminishes with increased age, and there is little or no association between stroke and current smoker status after the age of 65 years. <sup>59</sup>

During 1987, 1,030 Michigan residents died from smoking-attributable cerebrovascular disease, accounting for 19 percent of all 1987 Michigan deaths from this disease. 60

# Atherosclerotic Peripheral Vascular Disease

This condition refers to restricted blood flow to the lower extremities, the complications of which range from pain to loss of limbs, and even possible death. Cigarette smoking is a major risk factor for this disease, and its effects are increased when combined with diabetes. For those who smoke, quitting is the most effective method of decreasing the risk of this disease. <sup>61</sup>

During 1987, 105 Michigan residents died from smoking-attributable atherosclerotic peripheral vascular disease and other smoking-attributable arterial diseases. This represents 43 percent of all mortality from these diseases among Michigan residents during that year.<sup>62</sup>

# **Chronic Obstructive Pulmonary Disease**

Tobacco smoking is the *only* major risk factor for chronic obstructive pulmonary disease (COPD).<sup>63</sup> This condition, which arises when airflow in the lungs is permanently obstructed, has the following symptoms: chronic mucous hypersecretion, leading to chronic cough and phlegm production; thickening and narrowing of the lung's airways; and emphysema (caused by deterioration of lung tissue).<sup>64</sup>

Lung function, which generally is measured as an individual's ability to force breath, is known to decrease naturally with age. But, lung function decreases at a much faster rate for smokers than for nonsmokers.<sup>65</sup> The degree of loss of lung function is closely associated with the length of smoking history and the number of cigarettes smoked,<sup>66</sup> although even new smokers show some abnormal function in the small airways of their lungs.<sup>67</sup>

Many smokers—perhaps 10 percent to 15 percent<sup>68</sup>—develop serious respiratory disease.

Loss of lung function due to smoking is a cumulative and irreversible process.<sup>69</sup> Quitting smoking will not reverse the damage already suffered by the lungs, but stopping cigarette use *will* cause the degree of decline in lung function to revert to nonsmoker rates.<sup>70</sup>

The increase in U.S. deaths from COPD parallels the rise in U.S. deaths from lung cancer during this century, and both increases parallel the growth in cigarette smoking prevalence among U.S. citizens. The risk of death from COPD increases with earlier ages of smoking initiation, greater numbers of cigarettes smoked, and greater depths of inhalation. The Smokers are nine times to 10 times more likely than nonsmokers to die from COPD. Smoking lower-tar, lower-nicotine cigarettes appears to reduce some symptoms of lung disease, but not the overall progress of the disease.

As with lung cancer, the incidence of COPD in women has historically lagged behind that of men. However, as smoking prevalence has increased among women, rates of COPD among women have started to approach the rates of COPD among men.<sup>73</sup>

COPD-related morbidity is a serious concern, because death often comes only at the end of a very long period of disability. COPD causes greater severe shortness of breath and restriction of activity than any other major disease.<sup>74</sup>

Those who smoke only cigars or pipes show a higher rate of mortality from COPD than nonsmokers, but not as high as current cigarette smokers.<sup>75</sup>

During 1987, 2,798 Michigan residents died of smoking-attributable COPD and related conditions, including emphysema, chronic airway obstruction, asthma, pneumonia, bronchitis, and influenza. This represented more than 55 percent of all Michigan deaths from these diseases of the respiratory system during that year.<sup>76</sup>

# **Peptic Ulcers**

Studies also have shown a relationship between smoking and peptic ulcers. Such ulcers, particularly those in the duodenum (the first part of the small intestine), are more likely to occur in smokers than in nonsmokers. They are less likely to heal if the sufferer continues to smoke, and they are more often fatal in smokers than in nonsmokers.

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Sontag et al. looked at the relationship between ulcer relapse and characteristics such as duration of the disease, gender, age, amount of gastric acid secretion, and smoking. Of all the factors examined, only smoking was found to be correlated with duodenal ulcer relapse. In fact, nonsmokers who received no medical treatment actually had a *lower* recurrence rate of duodenal ulcers than smokers who received some treatment.<sup>77</sup>

These findings are supported by a study by Lane and Lee, which found that smokers had a significantly higher relapse rate for duodenal ulcers than nonsmokers, regardless of the type of drug treatment used.<sup>78</sup>

Evidence indicates that the clinical effects of nicotine on the digestive system may promote such ulcers. Nicotine decreases sphincter operation, allowing increased reflux of duodenal contents into the stomach, and decreases bicarbonate secretion by the pancreas, impairing acid neutralization in the duodenum and leading to ulcers. Quitting smoking may reduce the incidence of peptic ulcer. As such, smoking cessation is considered an important component in the treatment of this disease. 80

Data on smoking-attributable deaths from peptic ulcer in Michigan are not available.

# **Smoking and Pregnancy Outcome**

Maternal smoking during pregnancy has been shown to be related to several negative pregnancy outcomes. Among the best-substantiated effects of maternal smoking during pregnancy are low birthweight and late fetal/early infant mortality.

Studies have indicated that cigarette smoking by pregnant women is one of the most important, and most preventable, determinants of low birthweight in the United States. In fact, recent studies have shown that smoking during pregnancy can reduce birthweight by as much as 150 grams to 200 grams (nearly 1/4 pound to 1/2 pound).81

Based upon the strength of the evidence, the Centers for Disease Control identified the condition of *fetal tobacco syndrome* in 1985. This syndrome was defined as follows: 1) the mother smoked five cigarettes or more per day during pregnancy; 2) the mother had no evidence of hypertension during pregnancy; 3) the newborn showed symmetrical growth retardation when born at term; and 4) there was no obvious cause of fetal growth retardation.<sup>82</sup>

The 1989 U.S. Surgeon General's report on smoking and health cited a review of five studies that found 21 percent to 39 percent of the incidence of low birthweight in the United States, Canada, and Wales could be attributed to maternal smoking. This included low birthweight due to both premature delivery and small size for gestational age. The most common hypothesis for these conditions is that maternal smoking reduces oxygen flow to the fetus and, thus, retards fetal growth.<sup>83</sup>

Data from Scholl et al. indicate that this pattern of low birthweight among children of women who smoke during pregnancy may hold true for pregnant adolescents, as well as for adults. This study showed that teenagers who smoked during pregnancy were three times more likely than their nonsmoking peers to have babies that were small for their gestational age, averaging 222 grams (about 1/2 pound) less than the babies of nonsmokers. This information is significant, because smoking is more common among pregnant adolescents than among pregnant adults. 84

Smoking also has been associated with perinatal and infant mortality. Kleinman et al. conducted a study of fetal and infant death using the largest data base available for this type of study. They concluded that, relative to nonsmoking pregnant women, pregnant women who smoked experienced a 25 percent to 55 percent greater risk of mortality among first-born children. The level of risk was dependent upon the number of cigarettes smoked per day. For second births, the mortality risk was 30 percent greater among smokers, regardless of the amount smoked. The authors estimated that, if smoking were eliminated among pregnant women, 7 percent to 11 percent of fetal and infant deaths might be avoided. A Swedish study corroborated these findings, showing that maternal smoking increases the risk of late fetal and early neonatal death, even among groups of mothers who are otherwise at low risk for these occurrences.

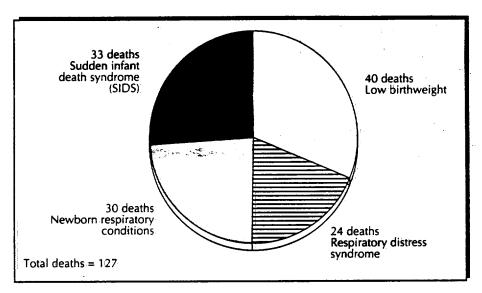
Other studies have documented an association between maternal smoking and bleeding during pregnancy; delivery complications due to abruptio placenta, placenta previa, and premature and prolonged rupture of membranes; spontaneous abortion; placental abnormalities; fetal bradycardia (increased heart rate); and jaundice in newborns.<sup>87,88</sup>

Nearly 20 percent of 1987 newborn and infant deaths from low birth-weight, respiratory distress syndrome, and newborn respiratory conditions were attributed to maternal smoking during pregnancy. In addition, smoking was responsible for more than 13 percent of 1987 Michigan deaths from sudden infant death syndrome (SIDS). As detailed in Figure 2, 127 Michigan infants died during 1987 due to maternal smoking during pregnancy.

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<sup>\*</sup> Neonatal death refers to death of an infant during the first 28 days after live birth.

Figure 2. Smoking-Attributable Infant Mortality as a Percentage of Total Infant Mortality from Smoking-Attributable Conditions, Michigan Children Aged Newborn Through 1 Year of Age, 1987



Source: SAMMEC 1189

# Other Health Effects of Smoking

In addition to the health effects just described, research is being conducted into the association between smoking and other health problems, among them breast cancer and osteoporosis. 90.91

And, in a recent development, researchers at the National Institute on Aging have suggested that although smokers generally tend to weigh less than nonsmokers, smoking is associated with a distribution of body fat that puts smokers at a higher risk for heart disease, diabetes, and other potentially fatal diseases. This research may help to influence smokers who have been reluctant to quit because of the tendency to gain weight after quitting.

# Passive Smoking

Evidence uncovered during the past 15 years has led to the conclusion that cigarette smoking is dangerous and deadly, not only to smokers, but also to nonsmokers who are regularly exposed to tobacco smoke in the environment. According to Byrd et al.:

Environmental tobacco smoke consists of mainstream smoke, sidestream smoke, and vapor phase components that diffuse through cigarette paper into the environment. Mainstream smoke is the smoke inhaled and exhaled by the smoker, and sidestream smoke is the smoke which issues from the end of the cigarette between puffs. Approximately 85 percent of passive smoke exposure is from sidestream and 15 percent from mainstream smoke.<sup>93</sup>

Although the chemical components of mainstream and sidestream smoke are the same, undiluted sidestream smoke contains higher amounts of ammonia, benzene, carbon monoxide, nicotine, and five other components known to be carcinogens. Sandler et al. cited reports that nonsmokers exposed to environmental tobacco smoke show increased levels of smoke byproducts in body fluids, increased activity of enzyme systems that metabolize potential carcinogens, and increased levels of urinary mutagens.

Estimates of the number of Americans who die each year from diseases related to environmental tobacco smoke are as high as 46,000, a figure that closely approximates the number of persons killed annually in auto accidents in this country. In fact, the number of persons who are injured from passive smoking is greater than the number who are injured from other environmental agents—such as asbestos—that are under federal or state regulation.

Sandler and associates studied a sample of persons in Maryland and found an increased risk of mortality from all diseases among both nonsmoking women and nonsmoking men who were regularly exposed to tobacco smoke at home. The mortality rate among these exposed nonsmokers was equal to that of regular cigar and pipe smokers, former cigarette smokers, and current smokers using fewer than 10 cigarettes per day. These differences in mortality between exposed and unexposed nonsmokers remained even when the analysis controlled for heart disease, the greatest source of mortality. As a result of their studies, Sandler and associates speculated that living with high levels of ambient tobacco smoke may alter an individual's general health status and increase the likelihood of fatality from a variety of illnesses.<sup>56</sup>

The disease most strongly associated with passive smoking is lung cancer. Most research into this relationship has examined nonsmokers who were living with smokers, and has not reflected smoke exposure from workplaces or other areas. Although research into this problem has been hampered by the inability to find a truly unexposed control group, studies during the last 10 years have used increasingly better methodologies that strengthen their conclusions.<sup>99</sup>

Studies conducted in Europe, Asia, and North America indicate that the risk of lung cancer may be up to 30 percent higher for nonsmoking spouses of smokers than it is for nonsmoking spouses of nonsmokers. This could translate into more than 2,500 smoking-attributable lung cancer deaths annually among nonsmokers in the United States. This risk is 100 times higher than the estimated effect of 20 years of exposure to chrysotile asbestos in the amounts normally found in buildings. 101

Several studies also have indicated a link between passive smoking and heart disease. These studies suggest associations between nonsmokers living with smokers and coronary heart disease, nonfatal coronary events, and arteriosclerotic heart disease. <sup>102</sup> In general, this association is not yet firmly established.

The effects of passive smoking also have been seen among children. Studies consistently have documented increased upper and lower respiratory problems among children of smoking parents. These diseases include pneumonia, bronchitis, tracheitis, asthma, and ear infections, as well as increased coughing, phlegm production, wheezing, and other symptoms. An association exists for both mild cases and those requiring hospitalization. The effects are strongest for children under the age of two years, <sup>103</sup> although some studies have shown an increased incidence of childhood reactive airway disease for children up to the age of 10 who live with smoking parents. <sup>104</sup> The association is greatest when the smoking parent is the mother, and increases with higher levels of cigarette use in the home. <sup>105</sup>

In addition, studies have indicated that childhood exposure to high levels of environmental tobacco smoke may cause a decrease in the normal lung function growth rate. (It is unknown whether this later translates into chronic airflow obstruction problems as adults.<sup>106</sup>) Other studies cautiously have suggested that pregnant nonsmokers who live with smokers have a higher risk of delivering babies of low birthweight.<sup>107</sup>

Although the evidence is not complete enough to draw conclusions at this time, the link between passive smoking and chronic respiratory disease, brain cancer, cancer of the endocrine glands, breast cancer, cerebrovascular disease, diabetes, ulcers, and emphysema are all being studied.<sup>108</sup>

Finally, ambient tobacco smoke is known to be an irritant to tissues, particularly the conjunctiva of the eyes and the mucous membranes of the nose, throat, and lower respiratory tract.<sup>109</sup>

### Accidental Injury and Death

Smoking is a major cause of accidental injury and death for smokers and nonsmokers alike. Cigarette-ignited fires are the leading cause of fire fatalities in this country, far outnumbering any other cause of fire deaths.<sup>110</sup>

Data from the Michigan Department of State Police show that there were 4,675 cigarette-ignited fires in the state during 1988, resulting in 20 deaths and 83 injuries, as well as total property losses of \$19.5 million. Two years before that, 3,322 cigarette-ignited fires had occurred in the state, resulting in 23 deaths, 106 injuries, and property losses of \$9.5 million. 111

The National Fire Protection Association (NFPA) reports that, during 1986, there were 45,500 cigarette-ignited residential fires in the United States, resulting in 1,415 deaths and 3,103 injuries. Among those who died or were injured were children and nonsmokers who were in the homes at the time of the blazes. During 1987, NFPA statistics show that 56 people lost their lives and 275 people sustained injuries in the 17,000 cigarette-ignited non-residential fires that occurred in the United States. A total of 12,800 vehicle fires and 155,900 other types of fires (including outdoor fires) also were started throughout this country by cigarettes during 1987. 112

The most feasible way to prevent injuries and deaths from cigarette-ignited fires is to manufacture and market self-extinguishing cigarettes. While patented examples of such products already exist, the tobacco industry has claimed that it cannot create fire-safe cigarettes that are also acceptable to consumers. In fact, some tobacco companies add substances to cigarettes that promote burning when the cigarette is lit but not being actively smoked. <sup>113</sup>

### **Excess Illness and Death Among Minorities**

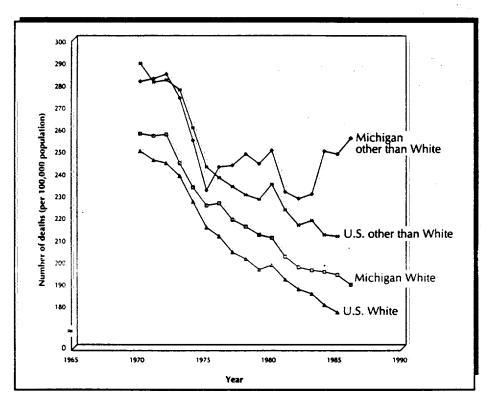
#### **Heart Disease Among Minorities**

When surveying the health consequences of tobacco use, it is important to consider the discrepancies in heart disease incidence rates that are found between minorities and Whites in the United States. These discrepancies are due mainly to the higher heart disease rate among Blacks, a group which also is known to have a higher smoking prevalence. Native Americans, Hispanics, and Asian/Pacific Islanders, on the other hand, are allibelieved to have lower rates of heart disease than the general population. 114

Similarly, a discrepancy exists between the heart disease death rates of minorities and Whites in Michigan. As can be seen in Figure 3, the heart disease death rate for Michigan minorities as a group is higher than the rate

for any other group, either in the state or in the country. In addition, the heart disease death rate for Michigan minorities has been increasing, while the rates for all other Michigan and U.S. groups have been declining.

Figure 3. Age-Adjusted Heart Disease Death Rates by Race for Michigan and U.S. Residents, 1970-1986



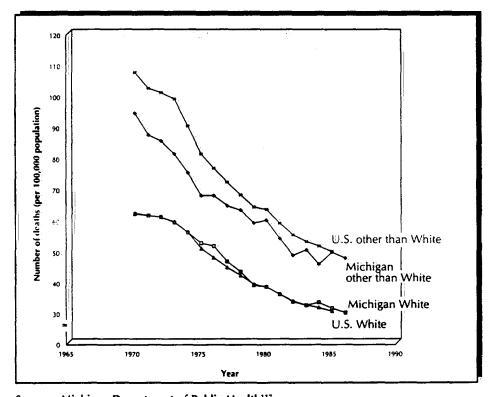
Source: Michigan Department of Public Health<sup>115</sup>

#### Cerebrovascular Disease Among Minorities

Data indicate that the mortality rates for cerebrovascular disease in Michigan and the United States also show racial differences. Cerebrovascular disease mortality rates are higher for Blacks and Native American males than for Whites (paralleling the fact that smoking prevalence rates are also higher for these two minority populations), although death rates for cerebrovascular disease among Asian/Pacific Islanders and Hispanics are lower than the rate for Whites. 116

Figure 4 shows a racial comparison for cerebrovascular disease mortality rates among Michigan and U.S. residents. While the rate for minorities has shown the same overall pattern of decline as the rate for Whites, the mortality rate for minorities still is significantly higher than the rate for Whites.

Figure 4. Age-Adjusted Cerebrovascular Disease Death Rates by Race for Michigan and U.S. Residents, 1970-1986



Source: Michigan Department of Public Health<sup>117</sup>

#### **Smoking-Related Cancer Among Minorities**

Michigan data on cancer also reflect racial differences. Table 2 shows incidence and mortality rates among Michigan Blacks and Whites for smoking-related cancers. For cancer of the lip, oral cavity, pharynx, pancreas, larynx, and lung and bronchus, incidence and mortality rates are higher for Black men and women in Michigan than for White men and women.

Table 2. Age-Adjusted Incidence and Mortality Rates by Gender and Race for Smoking-Related Invasive Cancers at Primary Sites, Michigan Residents, 1987

	Males		Females	
Primary Site	White	Black	White	Black
Incidence Rate (per 100,000):				
Lip, oral cavity, and				
pharynx	13.6	23.4	4.9	*
Pancreas	7.0	13.3	5.5	13.5
Larynx	7.2	12.1	1.8	•
Lung and bronchus	72.1	123.1	31.6	39.4
Mortality Rate (per 100,000):				
Lip, oralicavity, and				
pharynx (1984-1987)	4.4	7.7	1.6	2.3
Pancreas (1986-1987):	9.3	14.4	6.9	11.2
Earynx (1984-1987)	2.5	4.6	0.4	0.9
Lung and bronchus	72.2	110.7	27.8	37.7
* Rate is considered statistically unreliable				

Source: Michigan Department of Public Health 138

National data on racial differences for cancer indicate that Blacks have a lower overall survival rate. In fact, the National Cancer Institute collected data for 16 primary cancer sites and found that Blacks showed a lower five-year survival rate than Whites for 10 of them. 119

It has been suggested that tobacco is only one of several cancer risk factors that are more prevalent among the U.S. Black community. Other cancer risk factors that appear to be more prevalent among Blacks include alcohol use, poor nutrition, occupational hazards, and inadequate medical care. 120

While cancer data specific to other minority populations are scarce, available data suggest an increased risk among some populations for certain types of cancer.

For instance, it has been suggested that Chinese in the United States are at greater risk than Whites for cancer of the esophagus. Native Hawaiians are believed to have higher incidence and mortality risk for lung cancer than Whites. The same is true of Native American tribes in Oklahoma, a group that is known to have high smoking prevalence. On the other hand, lung cancer incidence and mortality risks for Hispanics are lower than for Whites, although this could change if smoking prevalence among certain Hispanic groups continues to increase. 121

#### **Infant Mortality Among Minorities**

The preceding discussion of the health effects of tobacco use indicated that maternal smoking is associated with poor pregnancy outcome, including late fetal and early infant mortality.

A comparison of infant mortality rates for Blacks and Whites in Michigan between 1970 and 1986 reveals a shocking difference. During 1986, the Black infant mortality rate of 23.0 deaths per 1,000 live births was 156 percent higher than the White rate of 9.0 deaths per 1,000 live births. Limited data are available on infant mortality rates for other minority communities in Michigan.

The importance of tobacco reduction in narrowing the gap between disease and death rates among racial groups has been noted by former U.S. Surgeon General C. Everett Koop:

We must place cigarette smoking in the total context of minority health, but in doing so we must give it its proper place in the hierarchy of risks. It ranks very high indeed. Two of the six leading causes of excess death observed among Blacks and other minorities are cancer and cardiovascular disease, both of which are smoking-related, and a third is infant mortality, to which cigarette smoking contributes. I submit that no public or private effort aimed at improving the health of Blacks and other minorities can omit the reduction of cigarette smoking as one of its major goals. 123

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# **Public Knowledge of the Harmful Effects of Tobacco**

Although the scientific community has clearly substantiated the negative health effects of tobacco use, the general public does not appear to be fully aware of this information and its significance.

The 1989 U.S. Surgeon General's report on smoking and health included an overview of the major surveys of public knowledge about the health effects of tobacco use.\* The report noted that there are three areas in which to measure public understanding of the relationship between tobacco use and health: knowledge of the health effects of tobacco use; perception of the personal risks involved with tobacco use; and knowledge of the magnitude of the risks associated with tobacco use.<sup>124</sup>

The following information summarizes the survey data discussed in the 1989 U.S. Surgeon General's report.

#### Knowledge of the Health Consequences of Tobacco Use

Today, 90 percent of Americans agree that cigarette smoking is harmful to health. A lesser percentage believe that any level of smoking (as opposed to only heavy smoking) is harmful. Current smokers consistently give answers that indicate that they are less aware than nonsmokers or former smokers of the health consequences of cigarette smoking.

The percentage of persons who recognize the associations between smoking and lung cancer, heart disease, and chronic lung disease has increased consistently over time until, today, a high percentage of the public knows about these links. However, the percentage of smokers who recognize these relationships continues to be lower than the percentage of non-smokers or former smokers who recognize these associations.

Although the percentage of individuals who recognize the risks of smoking and poor pregnancy outcome and the health effects of passive smoking is increasing, it still is slightly lower than the percentage who recognize risks related to other diseases. There is less public awareness of the effects of smoking on cancer of the bladder, larynx, and esophagus than about other smoking-related health conditions. Again, current smokers are

<sup>\*</sup> Surveys used to determine public knowledge about the health effects of smoking included the National Health Interview Surveys of 1985 and 1987; the Adult Use of Tobacco Surveys of 1964, 1966, 1970, 1975, and 1986; Gallup Polls; Roper Organization surveys; and other national and local surveys. The results of these surveys can be generalized to varying degrees.

less likely than other persons to recognize the risks for all of these smoking-related health problems.

The public seems to be only moderately knowledgeable about the health consequences of smokeless tobacco, and current smokers are less likely to know about the health risks associated with the use of smokeless tobacco than are former smokers or those persons who have never smoked.

#### Perception of the Personal Risks Involved with Tobacco Use

It has been suggested that there may be a large gap between having knowledge of the health effects of smoking and relating that knowledge to one's own health status. Survey results suggest that this may be the case for current smokers.

In a 1987 survey, only 55 percent of current smokers answered "yes" when asked if they believed that smoking had affected their health in any way. Presumably, this result reflects the fact that many smokers have not experienced actual symptoms of disease that they would associate with smoking.

When a 1986 survey asked current smokers about the possible effects of cigarette smoking on their health, only 40 percent said they were "very concerned" or "fairly concerned" about the personal health effects of smoking. Thirty-four percent said they were only "slightly concerned," and 24 percent indicated that they were "not in any way concerned" about the possible effects of cigarette smoking on their health.

It is possible that those smokers who are most concerned about the impact of cigarette smoking on their personal health may be the ones most likely to quit smoking.

#### Knowledge of the Magnitude of Risk from Smoking

An array of survey data regarding the degree of risk posed by smoking shows that the magnitude of the risk is continually underestimated by smokers and nonsmokers alike.

When asked to rate the dangers of smoking in relation to other environmental or personal risk factors—such as pollution, poor water quality, failure to use smoke detectors, high-fat diets, lack of exercise, or stress—those persons surveyed seldom recognized tobacco use as a predominant risk factor. The most recent data suggest that knowledge in this area may be increasing somewhat.

#### Adolescents' Knowledge of the Health Effects of Tobacco Use

Because some adolescents will become the tobacco users of the future, it is important to be aware of this group's knowledge about the links between tobacco use and health. Unfortunately, data on the beliefs of this age group are harder to find and are not as easily generalized as data on the beliefs of the adult population.

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One of the sources of information that does exist, however, is data derived from an annual series of surveys sponsored by the National Institute on Drug Abuse. The results of these surveys—which have been conducted among the nation's high school seniors every year since 1975—indicate that most of these teenagers recognize some type of health risk from smoking. The proportion who believe that smoking at least one pack of cigarettes a day poses a great risk to health increased from 51 percent in 1975 to 67 percent in 1985. (It should be noted, however, that this survey does not include teenagers who have dropped out of school prior to their senior year.)

While this is a welcome increase, the surveys indicate that teens still are less likely than adults to understand the risks of smoking. Nevertheless, the results show a promising decrease in the number of adolescents who believe that the dangers of smoking have been exaggerated. The surveys also indicate that, as with adults, teenagers who are current smokers or who come from families who smoke are less likely to personalize the health consequences of tobacco use. 125

A small non-random survey conducted in 1985 by the Office of the Inspector General, Department of Health and Human Services, among junior high, middle school, and high school students in 16 states explored adolescents' knowledge of the risks associated with the use of smokeless tobacco. Results indicated that most youth are poorly informed about the health consequences and the degree of risk posed by the use of chewing tobacco and snuff. 126

In Selling Smoke: Cigarette Advertising and Public Health, Warner evaluated the state of public knowledge about the health consequences of tobacco use:

The superficiality of the public's knowledge can be summarized as follows: for sizable percentages of the population, knowledge of the basic facts of smoking and health is exceedingly basic and the implications of those facts are not well understood. Furthermore, the public ranks smoking as a hazard in the same category as toxic dumps, saccharin, EDB in muffin mix, moderate overweight, and so on. That is, there is little differentiation of the *degree* of hazard, and hence the importance of not smoking becomes

diluted by the perception that smoking is simply one more ingredient in an environmental soup of risks to health. Finally, careful research has revealed that smokers do not personalize the risks of smoking. They acknowledge them, but they perceive them to be 'other people's problems'.<sup>127</sup>

#### **Tobacco Products and Addiction**

The health consequences of tobacco use are caused by repeated exposure to the toxic components of tobacco products. Such repeated exposure is ensured by the fact that tobacco use is addicting. <sup>128</sup>

Recognizing the addictive nature of tobacco products is central to understanding the factors that motivate tobacco users to continue the habit, even in the face of knowledge about tobacco's harmful effects. A recognition of the addictive nature of tobacco products also is important when attempting to identify strategies that will be effective in helping tobacco users to quit.

The 1988 U.S. Surgeon General's report on smoking and health alerted the nation to the fact that tobacco use is addicting, and that nicotine is the component that causes the addiction. In this report, the process by which tobacco users become addicted to nicotine was shown to be similar to that of heroin and cocaine.<sup>129</sup>

The addictive nature of these products also is acknowledged in the diagnostic manuals of the medical and psychiatric professions. The *International Classification of Diseases* has a special category for diseases and death caused by tobacco dependence. The *Diagnostic and Statistical Manual of Mental Disorders* includes tobacco dependence as a substance abuse disorder.

Nicotine from cigarette smoke or smokeless tobacco in the mouth is quickly absorbed into the bloodstream and passed on to the central nervous system, where specialized receptors react to its presence. The body responds with changes in pulse rate and skin temperature, increased blood pressure, decreased blood circulation to the extremities, brain wave changes, and the release of certain hormones and neuropeptides (amino acids). The combination of these bodily changes can cause a pleasurable effect for the tobacco user, thereby reinforcing the use of the tobacco product.<sup>122</sup>

According to the 1988 U.S. Surgeon General's report on smoking and health, tobacco use meets the primary criteria for drug dependence: highly

controlled or compulsive use; psychoactive (mind-altering) effects; and behavior that is reinforced by the use of the drug itself.

While these criteria alone are enough to define drug dependence, tobacco users exhibit other behaviors that further denote addiction. These include stereotypical patterns of use, use despite harmful effects, relapse following abstinence, and recurrent drug cravings. Nicotine also causes physiological reactions that are related to dependence, including increasing tolerance to the effects of the drug, physical dependence with withdrawal symptoms when the drug is removed, and pleasant (euphoric) effects.<sup>133</sup>

In addition to these physiological effects of tobacco use, psychological factors contribute to the inability of tobacco users to quit the habit. The use of tobacco is reinforced by psychological effects perceived by the tobacco users. Some researchers report that these products are used to regulate emotional states, specifically reducing negative emotions, such as stress or fear, and evoking positive, euphoric feelings. 134

# Economic Consequences of Tobacco Use

The primary goal of reducing smoking and the use of smokeless tobacco is to improve the health of Michigan's citizens. However, any behavior that results in the annual loss of more than 16,000 Michigan lives and the use of thousands of days of hospital care also has significant economic consequences for the State. These consequences are important because they determine, at least in part, how the State spends its resources. As such, they have a profound impact on the quality of life in Michigan.

Many authors have quantified the economic consequences of tobacco use from a wide variety of perspectives. For example, tobacco industry studies have emphasized the contribution that those involved in the production and distribution of tobacco products make to the U.S. economy in terms of employment, balance of trade, and tax payments to units of government. Not surprisingly, the value of goods and services used to provide medical care for those persons who become ill through the use of tobacco is not included in tobacco industry analysts' calculations. Neither is the value of funeral and legal services associated with tobacco-caused deaths.<sup>135</sup>

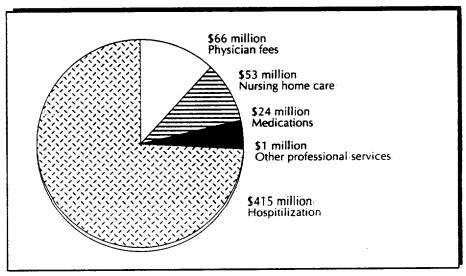
The analysis that follows does not attempt to calculate the "net" economic benefit to Michigan's economy that would be realized if tobacco use were to be eliminated in the state. Indeed, Warner contends that the net economic benefit of eliminating tobacco use may be small or non-existent, at

least for the U.S. economy as a whole. This is because the calculations must consider increased pension and Social Security costs for individuals whose lives are extended, as well as the fact that those whose lives are extended still may require, later in life, the costly health care services usually associated with terminal illness. However, Warner's analysis suggests that, in Michigan and other non-tobacco-producing states, there is a greater probability of significant net benefit from the absence of tobacco-related disease than for the U.S. as a whole.

Rather than presenting an economic cost/benefit analysis, the following discussion uses the SAMMEC II computer model to estimate the size of some of the undesirable economic consequences of tobacco use in Michigan.

The costs that have been calculated are of two kinds—direct and indirect. In the SAMMEC II model, *direct costs* are defined as dollars spent on medical services to care for people made ill from tobacco use. They are costs because they represent resources that could be used for other health services or social needs, such as improved housing, education, transportation, or recreational opportunities. The direct costs include hospital and nursing home care, professional services, and medications.

Figure 5. Smoking-Attributable Direct Costs for Michigan Adults, Aged 35 Years and Older, 1987



Source: SAMMEC II<sup>137</sup>

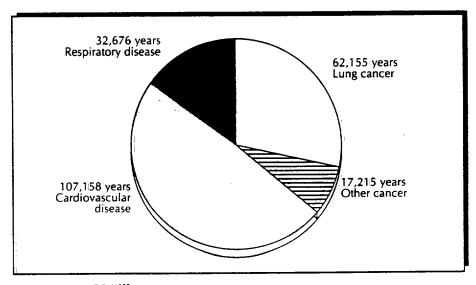
Figure 5 illustrates smoking-attributable direct costs for Michigan adults during 1987, as computed using the SAMMEC II program. Hospital care accounts for 74 percent of all direct costs, dwarfing all other categories. During 1987, the total cost to Michigan's economy for smoking-attributable medical care was \$559 million.

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The second type of cost associated with tobacco use is the *indirect cost* of *smoking-related mortality*. Indirect mortality costs take into account the value of the productivity lost when people die prematurely from smoking-related disease and, thus, do not realize the full potential of their lifetime earnings.

In part, the SAMMEC II program derives the figure for income lost due to premature death from a measure of the *years of potential life lost* (YPLL). The YPLL for a specific year can be computed as an estimate of the total number of additional years smokers would have been expected to live if they had not died prematurely during that year due to smoking-attributable illness.

Figure 6. Years of Potential Life Lost Due to Smoking-Attributable Disease for Michigan Adult Smokers, Aged 35 Years and Older, 1987



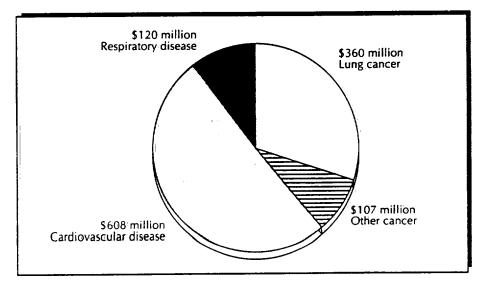
Source: SAMMEC II138

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Figure 6 displays 1987 YPLL figures for adult Michigan smokers, divided among the major diagnostic categories included in the SAMMEC II program. Cardiovascular disease took the greatest toll of any overall disease category, reflecting the large number of smoking-attributable deaths from various heart and cerebrovascular diseases. However, lung cancer is the single diagnosis responsible for the greatest loss of potential life, due to the fact that smokers die at a relatively young age from this disease. During 1987, the total YPLL for adult Michigan smokers was 230,236 years.

Given the calculation of YPLL, an estimate of indirect mortality costs can be made. Figure 7 displays indirect smoking-attributable mortality costs for adults in Michigan during 1987 for the major categories of smoking-related disease. As was reflected in YPLL (above), cardiovascular disease accounted for the greatest indirect costs of any disease category. Ischemic heart disease, with total indirect costs of \$363 million, was the single diagnosis with the largest cost impact, followed very closely by lung cancer (\$360 million). During that year, Michigan's total indirect smoking-attributable mortality costs equalled \$1.2 billion.

Figure 7. Smoking-Attributable Indirect Mortality Costs for Michigan Adult Smokers, 1987



Source: SAMMEC 11139

A final measure of the economic consequences of smoking is *estimated indirect morbidity costs*, defined as the estimate of lost productivity for individuals who are disabled by non-fatal (or slowly fatal) smoking-related illnesses.

These estimated indirect morbidity costs are measured as wages, salaries, and supplements for days lost from work among currently employed persons for long-term disability and hospitalization arising from smoking-attributable causes. Also included is the imputed value of house-keeping services for persons who are unable to keep house because of smoking-induced illness. <sup>140</sup> During 1987, Michigan's smoking-attributable estimated indirect morbidity costs totaled \$168 million.

Table 3 summarizes the smoking-attributable direct and indirect costs for the state during 1987. As computed using the SAMMEC II program, smoking-attributable disease and death resulted in total costs of more than \$1.9 billion in Michigan during 1987.

As can be seen in the data below, the use of tobacco products costs Michigan nearly \$2 billion worth of undesirable economic consequences each year. These costs translate into specific losses that are borne, in varying degrees, by insurers, employers, families of injured tobacco users, and units of government.

Table 3. Summary of Smoking-Attributable Direct and Indirect Costs for Michigan, 1987

Direct costs	\$ 559,217,201
Indirect mortality costs	1,234,502,773
Estimated indirect morbidity costs	\$ 168,757,136
Estimated Total Costs	\$ 1,962,477,110

Source: SAMMEC II141

# Success of the Antismoking Campaign

This chapter has outlined the tremendous burden of illness, death, and economic consequences that tobacco use has placed upon Michigan and the United States.

It is a burden that falls unevenly on minority populations and affects not only smokers, but also nonsmokers who are exposed to environmental tobacco smoke or smoking-attributable accidents and fires. It is a burden that also affects national and state economies because of the direct and indirect costs associated with caring for individuals affected by the use of tobacco.

However, it is encouraging to note that the antismoking activities that have taken place during the past 25 years have begun to decrease the size of this burden. Through vigorous efforts in public education, smoking prevention, and regulation of tobacco use, numerous tobacco users have been encouraged to quit the habit, and an unknown number of potential new users have been convinced to never begin. This positive change can be translated directly into improved health for individuals and fewer demands on economic resources.

Warner has estimated that antismoking activities postponed 789,200 deaths in the United States between 1964 and 1985. During 1985 alone, an estimated 112,400 lives were saved, representing a 12-percent decline in the number of deaths that could have been expected had the antismoking campaign not been successful in changing U.S. smoking patterns.

For each individual death that was postponed by the antismoking campaign, Warner has estimated that an average of 20.6 years of life was saved. In addition, he has predicted that the life savings attributable to the antismoking efforts will continue to rise as the birth cohorts most likely to be affected by the campaign reach the age at which the health effects of tobacco use are historically the greatest.<sup>142</sup>

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To reduce tobacco use among Michigan residents, it is necessary to first understand the patterns of use in the state. These patterns form a baseline against which to measure progress toward reducing the use of cigarettes and other forms of tobacco. Analyzing tobacco use among the different subgroups of Michigan's population shows the need for strategies that will assist a broad cross section of Michigan's residents to stop using tobacco.

# **Chapter Highlights:**

- If current trends continue during the next decade, 21.7 percent of Michigan residents will smoke by the turn of the century. Efforts to stem tobacco use must be greatly enhanced in order to meet the goal of cutting the prevalence of tobacco use among the Michigan population in half by the Year 2000.
- Although there has been some overall decline in the proportion of young people taking up smoking, the percentage of young women with less than a high school education who are beginning to smoke has been on the increase.
- The age at which persons are trying their first cigarette is dropping, a fact that is especially true among Whites and males.
- The consumption of cigarettes in Michigan declined by 3.2 percent between 1983 and 1987.
- In general, patterns of tobacco use in Michigan follownational patterns.
- During 1987, the proportion of persons in Michigan who smoked cigarettes was 28.9 percent, down from 32.4 percent in 1982.
- The proportion of Michigan residents who had smoked at one time but who had quit (i.e., the "quit ratio") was approximately 44 percent in 1987, up from roughly 42 percent in 1982.

Patterns of Tobacco Use

- During 1987, 59 percent of Michigan smokers surveyed said they smoked one pack of cigarettes or more per day.
- The cigarette smoking behaviors of the following population groups warrant special concern:

Women. The smoking prevalence among women is decreasing more slowly than the smoking prevalence among men. Women are quitting smoking at a slower rate than men.

Pregnant Women. Pregnant women who are less than 20 years old, who are unmarried, or who have less than a high school education are more apt to smoke cigarettes than older, married, and more educated pregnant women.

Blacks. The cigarette smoking rate is higher among Blacks than among Whites, and the smoking quit ratio for Blacks lags behind the smoking quit ratio for Whites.

Hispanics. The smoking rate among Hispanic men is higher than among men in the general population. Although it is generally less common for Hispanic women to smoke cigarettes than it is for women in the general population, the proportion of Hispanic women who smoke may be on the increase.

Persons with Low Educational Levels. There is an inverse relationship between smoking and educational level. Persons without high school diplomas smoke at a much higher rate than persons with a college degree.

Persons with Low Income. Smoking and income level are inversely related. Michigan residents with incomes of less than \$10,000 are more likely to be smokers than those residents with higher incomes. Smokers with low incomes are less likely to quit smoking than smokers with high incomes.

- During 1987, an estimated 3 percent of the Michigan population used smokeless tobacco products (primarily moist snuff or chewing tobacco). Virtually all smokeless tobacco users are male, and most of them are White and relatively young. In addition, the prevalence of smokeless tobacco use is higher among those state residents with lower educational levels.
- Nationally, the proportion of persons smoking cigars and pipes has declined significantly, to 4.3 percent. Prevalence of cigar and pipe use is believed to increase with age, and to be more common among Whites than Blacks. Cigar and pipe smokers also are more apt to be found at either end of the educational spectrum, having less than a high school education or possessing a college degree.

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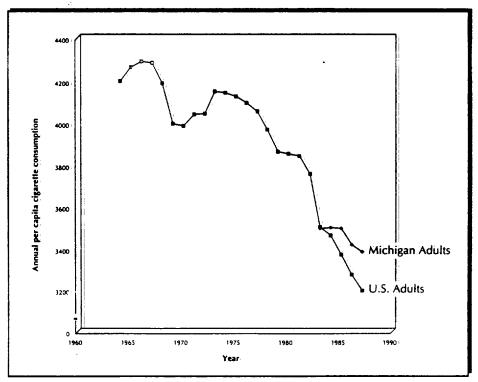
# Cigarette Use Among the General Adult Population

# Per Capita Consumption

The most common measure of the number of cigarettes consumed is per capita cigarette consumption, defined as the total number of cigarettes sold, divided by the total adult population (i.e., the number of persons aged 18 and older).\* Trends in cigarette consumption can be analyzed by comparing annual per capita consumption rates.

Figure 1 illustrates per capita cigarette consumption for Michigan and the United States. Michigan consumption data are not available for years prior to 1983; U.S. data are included for 1964 through 1987.

Figure 1. Annual Per Capita Cigarette Consumption Among U.S. and Michigan Adults, Aged 18 Years and Older, 1964-1987



<sup>&</sup>lt;sup>†</sup>For detailed information, see Appendix A, Tables 1 and 2: Sources: Michigan Department of Public Health¹; U.S. Department of Agriculture²

Patterns of Tobacco Use 55

<sup>\*</sup> It should be noted that the per capita figure is calculated per *person*, not per smoker.

As can be seen in Figure 1, Michigan's per capita cigarette consumption rate changed very little between 1983 and 1985, but showed a slight decrease from 1985 to 1987.

For the United States, U.S. Department of Agriculture data (not shown in Figure 1) describe a general pattern of increases for U.S. per capita cigarette consumption between 1900 and 1964, with noticeable decreases during the years surrounding the Great Depression, the end of World War II, and the years of the first widespread public discussion of cigarettes and health (1953-1954).<sup>3</sup>

With the release of the first U.S. Surgeon General's report on smoking and related health hazards in 1964, the trend toward increasing cigarette consumption changed. As can be seen in Figure 1, the national per capita consumption rate generally fell with each new year after 1964, with the exception of the years immediately preceding and immediately following the application of the Fairness Doctrine to broadcast cigarette advertising (1965-1966 and 1971-1973).\* Beginning in 1974, an overall downward pattern in consumption can be seen. A noteworthy decrease of 6.7 percent occurred in 1983, the year in which the federal cigarette excise tax was raised from 8 cents to 16 cents per pack.

The data show that the national per capita rate was similar to the Michigan rate during 1983, but fell at a faster pace after that. The national rate fell 8.7 percent between 1983 and 1987, while the Michigan rate fell only 3.2 percent during that time.

# **Smoking Prevalence**

The sales data cited earlier provide population-wide figures for cigarette consumption, but they do not indicate what proportion of the population uses tobacco, nor provide a breakdown of consumption by subgroups. Smoking prevalence data do provide these comparisons. Smoking prevalence is defined as the proportion of cigarette smokers in a population at a given point in time.

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<sup>\*</sup> In 1967, the Federal Communications Commission (FCC) ruled that the Fairness Doctrine applied to cigarette advertising and began to require that stations airing cigarette commercials donate a specified amount of air time for antismoking messages. Three years later, the U.S. Congress banned cigarette advertisements on television and radio stations, and the FCC responded by ruling that, effective in 1971, the Fairness Doctrine would no longer apply to cigarette advertising. As a result of these two actions, both broadcast cigarette advertisement and required "fair time" antismoking messages ended in 1971.

Smoking prevalence has been estimated for the total Michigan population and for specific population subgroups using responses to the state's Behavioral Risk Factor Surveys (BRFS).\* The Michigan Department of Public Health conducted the BRFS in Michigan during 1982 and 1987 to obtain adult population prevalence estimates for various health risk factors, such as seat belt use, obesity, smoking, hypertension, alcohol use, and physical activity.\*

Table 1 notes the prevalence of cigarette smoking among Michigan's adult population, based upon BRFS data from 1982 and 1987. Michigan's smoking prevalence in 1982 was estimated at 32.4 percent, falling to 28.9 percent in 1987. This represents an encouraging 10.8 percent drop in the proportion of current smokers among Michigan residents between those years. During that same time, there was a 9.3 percent rise in the proportion of never smokers in the state. The proportion of former smokers in National dropped by 2.5 percent.

Table 1. Michigan Cigarette Smoking Prevalence, Adults Aged 18 Years and Older, 1982 and 1987

	1982	1987	Percent Change (1982-1987)
Current Smokers	32.4%	28.9%	-10.8%
Former Smokers	23.7	23:0	-2.5
Never Smokers	44.0	48.1	+9.3

Source: BRFS<sup>4</sup>

Patterns of Tobacco Use

<sup>\*</sup> The methodifor the BRFS was defined by the U.S. Centers for Disease Control to allow interested states to study the distribution of health risks among demographic subgroups. The BRFS methodology uses random-digit-dialed telephone interviews. The survey questions: allow for calculation of the prevalence of "current smokers", "ever smokers" (i.e., current and former smokers): "never smokers" (i.e., those persons who have never smoked), and "heavy smokers" (i.e., those persons smoking at least 25 cigarettes a day) among the adult population.

<sup>\*</sup> BRFS data are the only recent detailed smoking prevalence data available for the Michigan-population. However, interpretation of the data-is limited by the small sample sizes of many subgroups. Standard errors for these subgroups are large, indicating that the actual prevalence figure falls within a fairly broad range of percentages. Standard errors for BRFS data reported in this chapter are included in Appendix B. All Michigan smoking prevalence figures included in the following text and graphs are midpoints of these ranges.

Additional information on smoking prevalence in Michigan can be gleaned from the 1983-1984 Michigan Blood Pressure Survey, a face-to-face household survey conducted among 2,800 Michigan residents.\* The Blood Pressure Survey also indicated that about one-third (33 percent) of the Michigan adult population smoked cigarettes during the early 1980s.5

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Figure 2. Cigarette Smoking Prevalence Among Adults, Michigan (Aged 18 Years and Older) and U.S. (Aged 20 Years and Older), 1965-1987

Sources: NHIS6; BRFS7

<sup>&</sup>lt;sup>†</sup> For detailed information, see Appendix A, Table 3.

<sup>\*</sup> The Michigan Blood Pressure Survey was a household interview survey of a stratified random sample that was representative of the Michigan non-institutionalized adult population. The survey was conducted by the University of Michigan for the Michigan Department of Public Health. Surveys were conducted during 1980 and again during 1983-1984 in an effort to acquire data about high blood pressure and related factors in Michigan's adult population.

Figure 2 shows smoking prevalence for the U.S. adult population, taken from the National Health Interview Surveys (NHIS),\* for those years between 1965 and 1987 when the surveys were conducted. (Michigan prevalences from BRFS data for 1987 are included in Figure 2 for comparison.) The data show a pattern of yearly declines in the proportion of current smokers among U.S. adults. Overall, U.S. smoking prevalence fell from 40.4 percent in 1965 to an estimated 29.1 percent in 1987.

Comparing data from the Michigan and U.S. surveys indicates that the proportion of current smokers in Michigan was very close to the proportion of current smokers across the United States in recent years and that the state and national rates showed similar cumulative declines between 1982 and 1987. This is somewhat in contrast to the comparison of per capita consumption, for which the Michigan rate fell more slowly than the national rate.

## **Smoking Quit Ratio**

In addition to information about the proportion of cigarette smokers in a population, survey data also can supply information about the quitting activities of cigarette smokers. The most common of these indicators is the *smoking quit ratio*, defined as the proportion of ever smokers who are not smoking at a given point in time.

Figure 3 illustrates smoking quit ratios for the U.S. adult population during the last two decades, as well as the Michigan quit ratio for 1987. This figure shows that the proportion of U.S. ever smokers who were not smoking at the time the surveys were conducted increased by 51.3 percent (15.2 percentage points) on the national level between 1965 and 1987.

<sup>\*</sup> The NHIS are conducted regularly (usually on an annual basis) by the National Center for Health Statistics. Face-to-face interviews with one adult per household are used to gather information on the smoking habits within each sample household. Prior to 1974, NHIS data were based upon both self-reports and proxy reports; since then, they have been based solely upon self-reports, either during the initial in-person visit or during a follow-up telephone call.

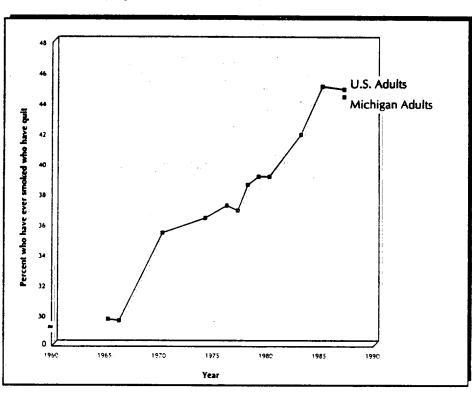


Figure 3. Smoking Quit Ratio Among Adult Cigarette Smokers, Michigan (Aged 18 Years and Older) and U.S. (Aged 20 Years and Older), 1964-1987

Michigan quit ratios for 1982 and 1987 were roughly equivalent to national quit ratios in those years. According to calculations based on BRFS data, the Michigan quit ratio for 1982 was 42.1 percent, while the 1987 Michigan figure was 44.3 percent.

## **Proportion of Heavy Smokers**

Another statistic that yields information on smoking patterns is the proportion of smokers who are heavy smokers (defined as those persons who smoke 25 cigarettes or more per day). 10

Data gathered from the 1987 BRFS show that the majority of current smokers in Michigan (about 59 percent) reported smoking one pack or more of cigarettes per day. (See Figure 4.)

<sup>\*</sup> For detailed information, see Appendix A, Table 4. Sources: NHIS<sup>8</sup>; Michigan Department of Public Health<sup>9</sup>

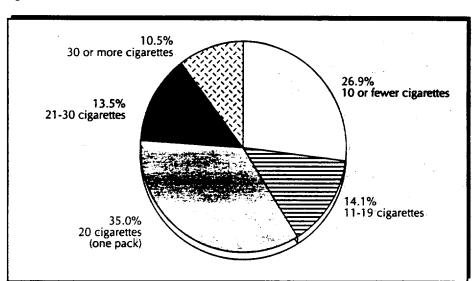


Figure 4. Number of Cigarettes Smoked Daily, As Reported by Adult Michigan Smokers, Aged 18 Years and Older, 1987

Source: BRFS<sup>11</sup>

To determine the proportion of the U.S. smoking population consuming various numbers of cigarettes per day, researchers have turned to NHIS survey data. According to these data, little variation has occurred since 1974 in the proportion of the U.S. smoking population that can be considered heavy smokers.\* While 26.0 percent of smokers surveyed in 1974 reported smoking 25 or more cigarettes per day, 27.1 percent surveyed in 1985 reported smoking that many cigarettes each day.

Based upon the self-reported NHIS data, it appears that the greatest proportion of current U.S. smokers (41.9 percent) consume approximately one pack of cigarettes per day (15 to 24 cigarettes), slightly less than the definition of a heavy smoker.<sup>12</sup>

Although a comparison of Michigan and national data is hampered by the survey differences in categorizing the number of cigarettes smoked, the data seem to suggest that a smaller proportion of Michigan's smoking population may be heavy smokers.

<sup>\*</sup> Prior to 1974; the NHIS allowed information on the amount smoked by an individual to be relayed by proxy, a factor that has been shown to understate the number of cigarettes smoked. Consequently, data gathered on this question prior to the 1974 survey have not been included in this analysis.

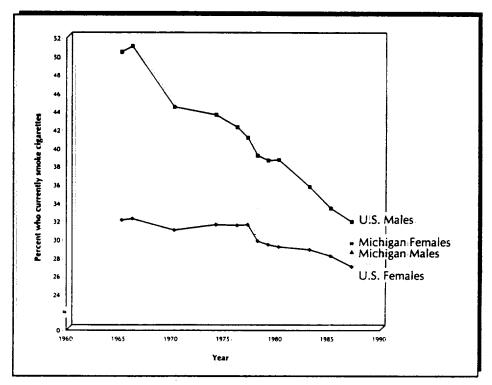
# Cigarette Use Among Special Populations

Based upon national and state tobacco use data, it is possible to identify certain population groups that should receive special consideration when planning tobacco reduction efforts.

#### Women

Women are of particular concern because they do not seem to have been as successful as men in reducing their smoking habits. Figure 5 details smoking prevalence rates for men and women in the United States between 1965 and 1987, and for men and women in Michigan in 1987.

Figure 5. Cigarette Smoking Prevalence by Gender Among Adults, Michigan (Aged 18 Years and Older) and U.S. (Aged 20 Years and Older), 1965-1987



<sup>\*</sup> U.S. gender data adjusted to the age distribution of the 1985 U.S. population.

Sources: NHIS13; BRFS14

<sup>&</sup>lt;sup>5</sup> For detailed information, see Appendix A, Tables 5 and 6.

Historically, smoking prevalence rates have been lower for women than for men in the general U.S. population. But health advocates are voicing increasing concern over the difference in the rate of decline in each gender's smoking prevalence.

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The smoking prevalence rate for U.S. women dropped by only 16 percent between 1965 and 1987 (from 31.9 percent to an estimated 26.8 percent), while the rate for men in the overall U.S. population fell by almost 37 percent during that same time (from 50.2 percent to an estimated 31.7 percent).

In fact, during every year between 1978 and 1987, the national cigarette smoking prevalence rate for women declined more slowly than the rate for men. If these trends continue, the smoking prevalence rate for women will meet, and eventually exceed, the rate for men.

On the state level, BRFS data on smoking behaviors by gender appear to differ from national figures. As can be seen in Figure 5, the smoking prevalence rate for Michigan women during 1987 (roughly 29 percent) was apparently higher than the national prevalence rate for women in that year (26.8 percent). For Michigan men, however, the smoking prevalence rate in 1987 was apparently slightly lower than the national estimate. In 1987, approximately 28 percent of Michigan men smoked, compared with an estimated 31.7 percent of U.S. men.

Thus, the 1987 BRFS data suggest that the national trend toward convergence of male and female smoking rates already may have been reached in Michigan. However, as noted previously, BFRS data must be interpreted with caution due to small sample size.

A second measure of smoking-related behaviors, smoking quit ratio, also has shown different patterns between the genders, both on the state and national levels. As Figure 6 indicates, for each year in which data were collected, the quit ratios among U.S. women were lower than the quit ratios among U.S. men. The Michigan BRFS data also suggest that the quit ratio among Michigan women was substantially lower than the quit ratio among Michigan men during 1987. Indeed, it appears that both nationally and in Michigan, the primary factor explaining the convergence of male and female smoking rates is that men are more likely to quit smoking than women.

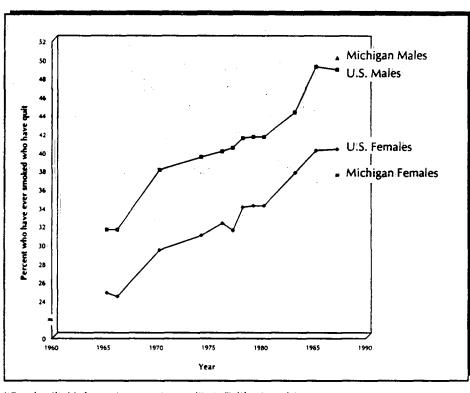


Figure 6. Smoking Quit Ratio by Gender Among Adult Cigarette Smokers, Michigan (Aged 18 Years and Older) and U.S. (Aged 20 Years and Older), 1965-1987

<sup>1</sup> For detailed information, see Appendix A, Tables 7 and 8. Sources: NHIS<sup>15</sup>; Michigan Department of Public Health<sup>16</sup>

## **Pregnant Women**

Because smoking by pregnant women has been shown to pose health risks to both mother and child, it is of special concern to health professionals.

Although smoking data specific to pregnant women in Michigan are not available, national data can be gleaned from the National Natality Surveys (NNS) for 1967 and 1980. Conducted by the National Center for Health Statistics, these surveys sampled the smoking behaviors of married women giving birth during each of those two years. Tables 2 and 3 illustrate some of the findings from these surveys.

Table 2 shows smoking behavior for pregnant women by race and age for the years 1967 and 1980. During 1967, both Black and White women under 20 years old were slightly less likely to smoke during pregnancy than women over the age of 20. By 1980, the reverse was true. The percentage of women over 20 years old who smoked during pregnancy had declined considerably by that year, while smoking among younger pregnant Black women had stayed the same, and smoking among younger pregnant White women had actually *increased*.

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Table 2. Smoking Behavior of U.S. Married Mothers, by Race and Age, 1967 and 1980

Race and Age Range	1967	1980	
Percent Who Smoked Before Becoming Pregnant:			
White Mothers			
Less than 20 years old	44 %	46 %	
20 years old or older	45	30	
Black Mothers			
Less than 20-years old	32	30	
20 years old or older	40	26	
Percent (Of Above Smokers) Who Quit Smoking While Pregnant:			
White Mothers			
Less than 20 years old	12 %	16 %	
20 years old or older	11	1.7	
Black Mothers			
Less than 20 years old	16	1.2	
20 years old or older	17	1.1	
Percent Who Smoked While Pregnant:			
White Mothers			
lless than 20 years old	38:%	39. %	
20: years old or older	40:	25	
Black Mothers			
Lless than 20 years old	2.7	27	
20 years old or older	33:	23	

Source: Kleinman and Kopstein<sup>17</sup>

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It should be noted that, in both 1967 and 1980, fewer than 20 percent of pregnant women who smoked quit smoking while pregnant, regardless of race or age. Among Black females, the percentage of smokers quitting while pregnant actually decreased between 1967 and 1980.

The most important factor accounting for the decline in smoking during pregnancy between the two survey years seems to be a decrease in the number of women who smoked before becoming pregnant. In fact, White women under 20 years old (the only group in the survey that showed an increase in smoking during pregnancy between 1967 and 1980) were the only group that did not experience a decline in smoking before pregnancy.

Data on smoking status by educational level for married White pregnant women are given in Table 3. The data indicate that, at least among this group of women, education has a strong inverse relationship with smoking during pregnancy.

Table 3. Smoking Behavior, by Years of Education, of White Married Mothers in the United States, Aged 20 Years and Older, 1967 and 1980

Years of Education	1967	1980
Percent Who Smoked Before Becoming Pregnant:		
Less than 12 years of education	54:%	47 %
12 years	41	34
13 to 15 years	43	25
16 years or more	38	15
Percent (Of Above Smokers) Who Quit Smoking While Pregnant:		
Less than 12 years of education	1/1 %	9 %
12 years	10.	17
13 to 15 years.	1i2·	20:
16 years or more	1:2:	27.
Percent Who Smoked While Pregnant:		20: 27: 43 %: 28: 20: 11:
Less than 12 years of education	48 %	43 %
12 years	37 <sup>-</sup>	28
13 to 15 years	38	20:
16 years or more	34	11 C

Source: Kleinman and Kopstein<sup>18</sup>

Of the married White women surveyed in 1967, 48 percent of those with less than a high school education smoked during pregnancy, in contrast to 34 percent of those with a college education. By 1980, this gap had widened, and the number of women with less than a high school education who smoked during pregnancy was more than four times greater than the number of women with a college education who did so (43 percent compared with 11 percent).

Educational level was also related to the likelihood of quitting smoking during pregnancy. By 1980, those women with the highest educational level were three times less likely to have smoked before becoming pregnant than those women with the lowest educational level and, if they smoked before becoming pregnant, they were also three times more likely to quit smoking during pregnancy.

As illustrated by the NNS data, although smoking prevalence declined overall among pregnant women between 1967 and 1980, the decreases were notably smaller among those women who were less than 20 years old and less educated than their counterparts.

Williamson et al. pooled data from the 1985-1986 BRFS conducted in several states (not including Michigan) to measure smoking among pregnant women. Results indicated that, at the time of the surveys, the prevalence of smoking among pregnant women was 9 percentage points lower than the prevalence among non-pregnant women, and that 80 percent of that difference could be attributed to quitting smoking during pregnancy.

Women who continued to smoke during pregnancy consumed considerably fewer cigarettes per day than their non-pregnant counterparts, according to the Williamson study. Pregnant women who were older than 35 years of age were more likely to smoke than were their younger counterparts, and pregnant women who were not married were more likely to smoke than were married pregnant women. This last observation was especially true for White women in the Williamson study.19

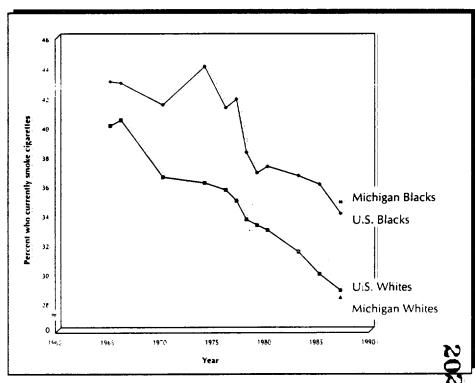
The 1985 NHIS included questions on smoking for women between the ages of 18 and 44 years old who had given birth within the previous five years. These data support other studies on the national level that suggest that women who are young, who have a relatively low income, who are unemployed, or who are unmarried are the most likely to continue smoking during pregnancy and the least likely to reduce their cigarette consumption while pregnant.20

# **Racial and Ethnic Groups**

Although national data indicate that the gap between mortality rates for minority and White populations seems to be widening for a number of causes of death, <sup>21</sup> little information is available on the smoking behaviors of the various racial and ethnic minority groups in Michigan. This is particularly unfortunate because nearly one in five Michigan residents belongs to a minority group. Furthermore, many of the tobacco industry's marketing practices specifically target minority communities.<sup>22</sup>

The discussion that follows is based primarily upon U.S. data. However, the Michigan data that are available for Whites and, to a limited degree, for Blacks, suggest that Michigan is not too different from the nation as a whole.

Figure 7. Cigarette Smoking Prevalence, by Race, Among Michigan Adults (Aged 18 Years and Older) and U.S. Adults (Aged 20 Years and Older), 1965-1987



\* For detailed information, see Appendix A, Tables 9 and 10. Sources: NHIS<sup>23</sup>; BRFS<sup>24</sup>

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Blacks comprise 14.8 percent of Michigan's population. Data on smoking prevalence among Blacks in Michigan and the United States are shown in Figure 7. National data for 1965 through 1987 show a higher smoking prevalence rate for Blacks than for Whites in the United States for each survey year.

As Figure 7 indicates, both Blacks and Whites showed a decrease in smoking prevalence on the national level between 1965 and 1987. However, the pattern of decrease for each group was quite different. For Whites, the decline in smoking prevalence was consistent; for Blacks, little change occurred in the smoking prevalence rate between 1965 and 1977, but a more dramatic decrease (one comparable to Whites) was noted after that time.<sup>25</sup>

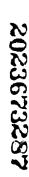
Although the race-specific rates that were calculated from Michigan BRFS data must be viewed cautiously due to the small number of Blacks included in the sample, the data do suggest that 1987 smoking prevalence rates for Blacks and Whites in Michigan were comparable to estimated 1987 national smoking prevalence rates for those two groups. The smoking prevalence rate for Blacks in 1987 was approximately 34 percent, while the White rate was roughly 28 percent.

Comparing smoking quit ratios between Blacks and Whites on the national level reveals many of the same patterns seen for prevalence statistics. As can be seen in Figure 8, national smoking quit ratios for Blacks have consistently lagged behind those for Whites. The national smoking quit ratio for Blacks fluctuated until 1977, at which time it began a pattern of consistent increases. The national quit ratio for Whites, on the other hand, increased steadily between 1965 and 1987.

The rates of change in both smoking prevalence and smoking quit ratio are significantly different for Black men and Black women. Analyzing these statistics within each gender indicates that the smoking behavior of Black women may be a key factor in maintaining higher smoking rates for the U.S. Black population as a whole.

Although smoking prevalence continues to be higher among Black males than among White males in the United States, the prevalence among Black males is declining at a steeper rate. Black males also have been quitting smoking at an increasingly faster rate than White males during recent years. However, the rates of change in smoking prevalence and in smoking quit ratio are not statistically different for Black females and White females.<sup>27</sup> Consequently, the smoking behavior of Black women may be a key factor in maintaining what appear to be high smoking rates among the U.S. Black population as a whole.

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1965 1975 1980 1985 1990

U.S. Whites

U.S. Whites

U.S. Blacks

Figure 8. Smoking Quit Ratio, by Race, Among U.S. Adult Cigarette Smokers, Aged 20 Years and Older, 1965-1987

<sup>†</sup> For detailed information, see Appendix A, Table 11. Source: NHIS<sup>26</sup>

Both national and state data indicate that Blacks are less apt to be heavy smokers than Whites. An analysis of the NHIS data reveals that U.S. Blacks had a much lower proportion of heavy smokers than U.S. Whites during each of the years studied.

Data from the Michigan Blood Pressure Survey and the BRFS indicate that Michigan statistics for heavy smokers mirror national statistics. For example, the 1987 BRFS data indicate that less than 6 percent of Black Michigan smokers smoked 30 cigarettes or more per day, while more than 11 percent of White Michigan smokers were in that category.

At first glance, this would seem to contradict the higher rates of smoking-related mortality found for U.S. Blacks, as compared with U.S. Whites. However, Novotny et al. noted reports that Blacks are more likely than Whites to consume higher-tar, higher-nicotine cigarettes and mentholated brands. They suggest that using cigarettes that combine these product

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characteristics encourages deep and prolonged inhalation, which may be one factor contributing to the higher rate of some smoking-related diseases among Blacks.<sup>28</sup>

Blacks also may show a higher smoking-attributable mortality than Whites because the Black population has a higher proportion of smokers and also has reduced access to early medical intervention, compared with the White population.

Hispanics comprise 2.0 percent of the Michigan population. Unfortunately, information regarding the smoking patterns of Michigan's Hispanics is not available. However, national data can suggest the smoking patterns that might be expected among Michigan Hispanics.

The most complete information on smoking behavior among the U.S. Hispanic population comes from the Hispanic Health and Nutrition Examination Survey (HHANES), which was conducted between 1982 and 1984. This survey, which included a household interview and a medical examination, sampled Puerto Rican-Americans, Cuban-Americans, and Mexican-Americans from geographic areas of the United States in which these groups were highly represented. Table 4 displays U.S. Hispanic smoking prevalence rates calculated from these data.

Table 4. Smoking Prevalence, by Gender, Among U.S. Hispanic Adults, Aged 20 Years to 74 Years, 1982-1984

	Mexican- Americans	Cuban- Americans	Puerto Rican- Americans
Males	43%	42%	40%
Females	24:	24	30

Source: HHANES29

The HHANES data indicate that smoking prevalence rates were higher for Hispanic men than for non-Hispanic men in the United States during the years studied. Smoking prevalence for Hispanic men ranged between 40 percent and 43 percent for the period between 1982 and 1984, while the overall national male rate was 35.5 percent in 1983.

On the other hand, smoking prevalence rates for Mexican-American women and Cuban-American women were lower than for women in the general U.S. population during that time. Smoking prevalence for these two groups of Hispanic women was 24 percent between 1982 and 1984, while smoking prevalence for U.S. women overall was 28.7 percent in 1983; smoking prevalence among Puerto Rican-American women was 30 percent during that time period.

Escobedo et al. used smoking histories from the HHANES to compare cigarette smoking behaviors among successive 10-year birth cohorts in the U.S. Hispanic population. They concluded that members of the U.S. Hispanic population quit smoking at rates that were lower and slower to change than those for the general U.S. population.

In addition, these authors observed that the Mexican-American male cohorts were the only group in the study to show a marked decrease in cigarette smoking prevalence. The Cuban-American and Puerto Rican-American male cohorts showed a slight decrease in cigarette smoking prevalence, while the Cuban-American and Puerto Rican-American female cohorts actually experienced marked increases in smoking prevalence. The cigarette smoking prevalence among the successive cohorts of Mexican-American women changed little.<sup>30</sup>

### Persons with Low Educational Levels

One factor that seems to be linked to higher smoking prevalence across most population groups is low educational level. Figure 9 displays smoking prevalence rates for U.S. adults by educational level.

The NHIS data clearly indicate an inverse relationship between smoking prevalence and educational level. For persons with less than a high school diploma, smoking prevalence remained nearly unchanged from 1966 through 1987, hovering near 35 percent. But, during that same time period, smoking prevalence rates for college graduates declined by more than 51 percent (17.4 percentage points), falling from 33.7 percent in 1966 to an estimated 16.3 percent in 1987.

A study by Farrell and Fuchs indicated that such differences in smoking prevalence were detectable among people even before they had completed their educations. Adolescents who planned to go on to further education smoked less than those who did not.<sup>32</sup>

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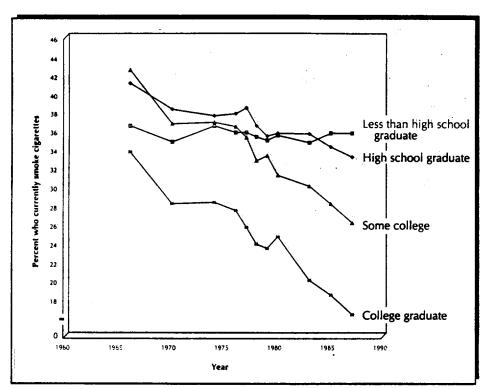


Figure 9. Smoking Prevalence, by Educational Level, Among U.S. Adults, Aged 20 Years and Older, 1966-1987

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<sup>†</sup> For detailed information, see Appendix A, Table 12. Source: NHIS<sup>31</sup>

Michigan BRFS smoking prevalence rates by educational level generally reflect the same inverse pattern as the national data. (See Figure 10.)

Smoking prevalence among college graduates in Michigan appeared to fall about 15 percent (3.3 percentage points) between 1982 and 1987, while smoking prevalence among Michigan residents with less than a high school education appeared to fall only 4 percent (1.6 percentage points) during that time. By 1987, smoking prevalence among Michigan residents with less than a high school diploma was nearly twice as high as smoking prevalence among Michigan residents who had graduated from college. This inverse relationship between educational attainment and smoking prevalence is supported by data from the 1983-1984 Michigan Blood Pressure Survey.

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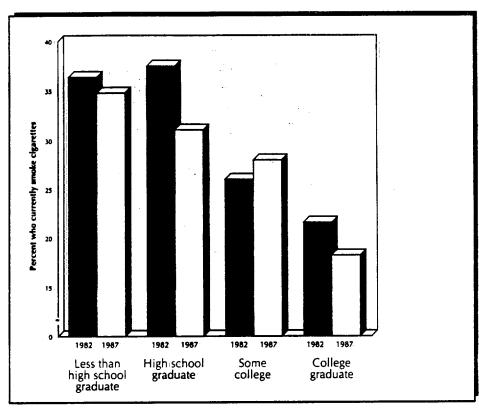


Figure 10. Cigarette Smoking Prevalence, by Educational Level, Among Michigan Adults, Aged 18 Years and Older, 1982 and 1987

Source: BRFS<sup>33</sup>

The quit ratio among smokers in the United States as arranged by educational level is detailed in Figure 11. While the smoking quit ratio has gone up for persons at all educational levels in the United States since 1964, those smokers with the most education have experienced the greatest increase in quit ratio, while those with the least education have experienced the smallest increase in quit ratio.

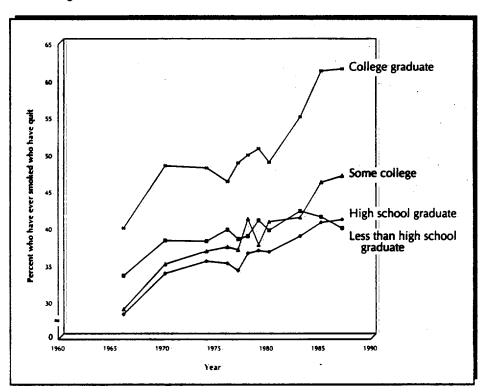


Figure 11. Smoking Quit Ratio, by Educational Level, Among Adult U.S. Cigarette Smokers, Aged 20 Years and Older, 1966-1987

Smoking quit ratios for Michigan cigarette smokers, arranged by educational level, are presented in Figure 12. The quit ratio for college graduates is notably higher than the quit ratio for those persons with less than a high school education. Generally, quit ratios increased at all educational levels between 1982 and 1987 for Michigan residents. The one exception is for persons in the category of "some college education," which showed a slight decrease in quit ratio (due in large part to an apparent increase in smoking prevalence). However, because of the relatively small number of persons sampled in this subgroup, this apparent deviation from the general trend must be viewed with caution.

<sup>&</sup>lt;sup>†</sup> For detailed information, see Appendix A, Table 13. Source: NHIS<sup>34</sup>

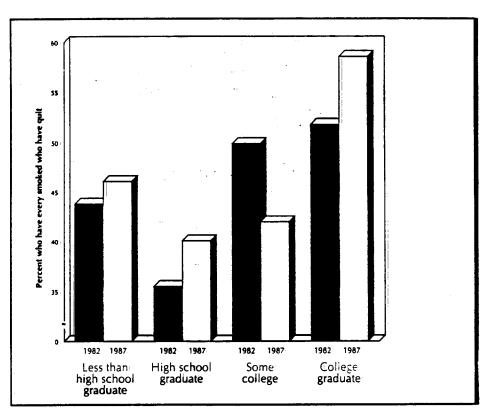


Figure 12. Smoking Quit Ratio, by Educational Level, Among Michigan Adults, Aged 18 Years and Older, 1982 and 1987

Source: Michigan Department of Public Health<sup>35</sup>

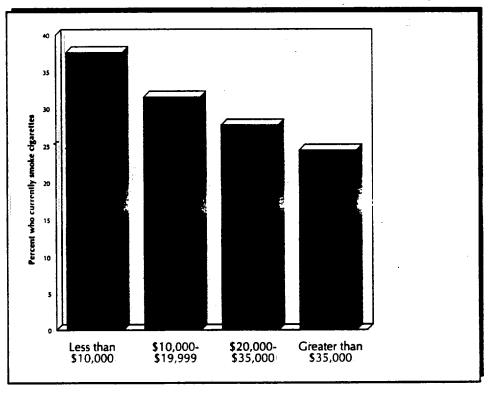
### Persons with Low Income

Surveys show that low income is correlated with higher-than-average smoking prevalence. Figure 13 illustrates smoking prevalence by income level for Michigan residents in 1987.

The data in Figure 13 indicate that there is an inverse relationship between smoking prevalence and income level. During 1987, persons in Michigan with annual incomes of less than \$10,000 had a smoking prevalence rate that was more than 50 percent higher (13.3 percentage points) than the smoking prevalence rate of persons with annual incomes of more than \$35,000.

Novotny et al. recognized a similar trend on the national level among those persons with low incomes. Their study of the socioeconomic factors related to smoking indicated a weighted smoking prevalence\* of 32.8 percent for persons above the poverty level, while the prevalence for those below the poverty level was calculated at 45.2 percent. This represents a relative difference of nearly 40 percent (12.4 percentage points) in prevalence between these two groups.<sup>37</sup>

Figure 13. Cigarette Smoking Prevalence, by Income Level, Among Michigan Adults, Aged 18 Years and Older, 1987

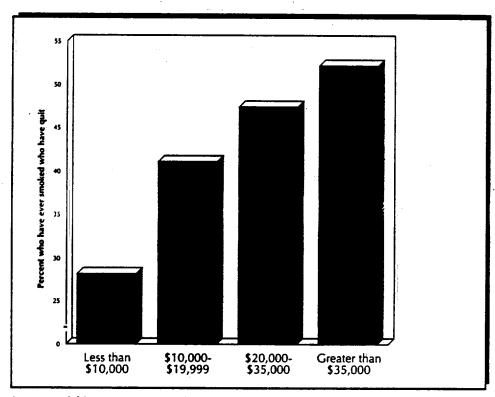


Source: BRFS<sup>36</sup>

<sup>•</sup> The sample used in this study was poststratified by age, gender, and racial distribution of the U.S. population for the survey year, and then weighted by the individual probability of selection.

A relationship can also be noted for income level and smoking quit ratio. Among Michigan residents, those smokers with the least amount of income also are the least likely to quit smoking. (See Table 14.) During 1987, the quit ratio for Michigan smokers with annual incomes of more than \$35,000 was approximately 52 percent, in contrast to the quit ratio of less than 29 percent for persons with annual incomes of less than \$10,000.

Figure 14. Smoking Quit Ratio, by Income Level, Among Michigan Adult Smokers, Aged 18 Years and Older, 1987



Source: Michigan Department of Public Health38

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### Children and Adolescents

Over time, smoking prevalence rates change based upon the number of current smokers who quit or die, and the number of persons who start the habit. Since most new smokers have established their tobacco habits by the age of 20 years old,<sup>39</sup> this latter factor (called smoking initiation) generally refers to the smoking behavior of children and adolescents. Consequently, data on the smoking patterns of young persons must be considered when determining what efforts are needed to reduce smoking prevalence in Michigan.

In the absence of complete information on the smoking behavior of persons younger than 18 years old, three measures can be used to gauge smoking initiation: smoking prevalence among adolescents; smoking prevalence among persons aged 20 to 24 years old; and statistics on the age of smoking initiation.<sup>40</sup>

While survey data on smoking prevalence among adolescents would seem to be the most direct means of measuring smoking initiation, these surveys often are difficult to interpret because of differences in the definitions of some terms (such as "regular" or "experimental" smoker) and other methodological considerations. In addition, these surveys often do not include a representative sample of adolescents. For example, school-based surveys do not include high school drop-outs, a group that is thought to have a higher-than-average smoking prevalence.

Unfortunately, Michigan survey data for adolescents were not available at the time this report was written.\* Therefore, national data were used as the best current source of information when estimating smoking prevalence among Michigan adolescents.

Data from the National Institute of Drug Abuse (NIDA) High School Seniors Surveys, which have been used since 1975 to collect information about smoking among students, are presented in Figure 15.

<sup>\*</sup> According to the Michigan Department of Education, some Michigan-specific data from a small sample of Michigan high school students will be available by the end of 1990.

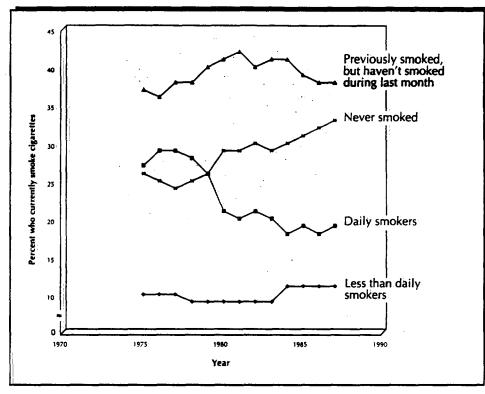


Figure 15. Cigarette Smoking Prevalence Among U.S. High School Seniors by Level of Use, 1975-1987

The data shown in Figure 15 indicate that the proportion of "daily smokers" among U.S. high school seniors fell from 27 percent to 19 percent between 1975 and 1987, a relative decline of 30 percent (8 percentage points). This drop in prevalence of daily smoking was met with a corresponding increase of 27 percent (7 percentage points) in never smokers, a category that rose from 26 percent to 33 percent between those years.

The number of "experimental smokers" among high school seniors (those persons who smoked less than once a day and those who had smoked previously, but not during the last month) remained fairly stable during those years.

Further analysis of the 1987 NIDA survey data (Table 5) shows that gender, race, and educational aspirations are correlated with smoking prevalence rates among UIS. high school seniors. For instance, high school seniors who are female are more likely to be daily smokers than their male

<sup>&</sup>lt;sup>†</sup> For detailed information, see Appendix A, Table 14. Source: NIDA<sup>41</sup>

peers. Likewise, White high school seniors are more likely to smoke cigarettes on a daily basis than are Black high school seniors, and high school seniors who do not plan to go on to further education are more likely to be daily smokers than high school seniors who do plan to attend college.

Table 5. Smoking Prevalence, by Gender, Race, and Plans for Higher Education, Among U.S. High School Seniors, 1987

	Gender		Race		College Plans	
	Male	Female	White	Black	Yes	No
Daily Smokers	16 %	20 %	20 %	8 %	14 %	30 %
Less Than Daily Smokers	11	11:	12	6	11	11:
Previous Smokers, Notin Last Month	38	38	38 <sup>,</sup>	41	39	35
Never Smokers	35	31	30	45	37	25

Source: NIDA<sup>42</sup>

Another method of determining the smoking habits of adolescents is to survey the smoking behaviors of persons between the ages of 20 and 24 years old. Such a survey can provide a measure of smoking initiation among adolescents for the years immediately preceding that survey. There are two advantages to such data: 1) A survey sample can be obtained that is representative of the total age-specific population, and 2) because most smoking habits are established before the age of 20, the data are fairly complete. On the other hand, such data do not provide information regarding the age at which these individuals began smoking, nor are they necessarily reflective of current levels of smoking initiation.

Smoking prevalence rates for 18- to 24-year-olds in Michigan can be obtained from the state's BRFS data for 1982 and 1987. During 1982, members of this age group had a smoking prevalence rate of approximately

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34 percent; by 1987, their smoking prevalence rate had declined to about 29 percent. These Michigan figures are roughly comparable to the national estimates presented in Figure 16. Breakdowns by gender and educational level have been included because of the effect these variables have on cigarette smoking prevalence.

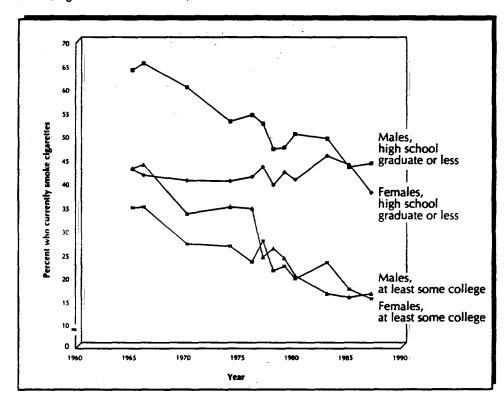


Figure 16. Cigarette Smoking Prevalence, by Gender and Educational Level, Among U.S. Adults, Aged 20 to 24 Years Old, 1965-1987

On the national level, the 1987 smoking prevalence for persons between the ages of 20 and 24 years old was 29.5 percent, representing a decrease of 38 percent (18.3 percentage points) from the 1965 rate. This finding suggests a corresponding national decrease in smoking initiation among adolescents during the mid-1980s.

However, the national data indicate marked differences between women and men in the 20- to 24-year-old age group. Although smoking prevalence dropped among both women and men in this age range between

<sup>&</sup>lt;sup>†</sup> For detailed information, see Appendix A, Table 15. Source: NHIS<sup>43</sup>

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1965 and 1987, the drop in prevalence among young women was only onequarter of the drop in prevalence among young men.

Much of the difference between genders is related to educational level. Although prevalence rates dropped noticeably between 1965 and 1985 for young males at all educational levels, the prevalence rate for young females with a high school diploma or less increased by 1.0 percent during that time. This increase among less-educated young women contributed to an inflated overall rate for women relative to men in this age group.<sup>44</sup>

The estimates that have been released from the 1987 survey indicate that there may be a change in this pattern of increase for young females with a high school diploma or less. Nevertheless, this information indicates a need for concern about the smoking habits of female adolescents, especially those with no plans to pursue post-high school education.

The third factor important to a review of smoking patterns is referred to as the age of smoking initiation. Adult smokers in the general population have been surveyed regarding the age at which they began smoking. While this method carries the inherent risk of inaccurate data due to poor recall, it does offer the ability to compare age of smoking initiation data for successive birth cohorts, thus helping assess trends in the age of smoking initiation over time. 15

Although Michigan-based information on age of smoking initiation is not available, the 1989 U.S. Surgeon General's report on smoking and health included an analysis of national data on age of smoking initiation. Taken from the 1978, 1979 and 1980 NHISs, these data included age of smoking initiation information reported by successive birth cohorts of U.S. adults. According to the analysis, the age at which U.S. residents begin smoking is getting younger. While only 38 percent of ever smokers born between 1910 and 1914 said they had begun smoking by the age of 18, a full 52 percent of ever smokers born between 1950 and 1954 were smoking cigarettes by that age. This decline in the age of smoking initiation was especially noticeable among women.<sup>46</sup>

Information on the ages at which U.S. adolescents typically smoke their first cigarette also can be obtained from the NIDA High School Seniors Surveys. Of the students who had ever smoked, more than one-fourth (25.8 percent) said they had smoked their first cigarette by 6th grade, and more than half (57.3 percent) said they had smoked their first cigarette by the 8th grade. The increase in smoking initiation that occurred between 6th grade and 8th grade in this survey was higher than the increase seen during any other two-year period in junior high and senior high school.

More than 72 percent of those seniors who had ever smoked said they had tried their first cigarette by 9th grade. More than 84 percent of the senior ever smokers said they had tried smoking by 10th grade, and more than 94 percent said they had tried cigarettes by 11th grade.

Further analysis of the data shows that males were likely to begin smoking at a younger age than females and, to a smaller degree, White students were likely to begin smoking at a younger age than Black students. Plans for further education did not factor significantly into age of smoking initiation in this adolescent survey.<sup>47</sup>

This apparent decline in the age at which young persons are trying their first cigarette has important health implications, since many of these experimenters are becoming regular smokers at increasingly younger ages. Studies have shown that persons who begin smoking at a young age are at higher risk for smoking-related diseases as adults.

# How Changes in Cigarettes Affect Consumption

Among the many factors that may have affected smoking patterns during the past 25 years are modifications in the types of cigarettes available on the market. During that time, U.S. consumers have seen changes in cigarette filter tips, tar and nicotine levels, and cigarette lengths, as well as the addition of menthol.

Filter tips represent one of the primary ways in which cigarettes have changed during the last few decades. According to Federal Trade Commission data, 58 percent of the cigarettes sold in this country during 1963 had filter tips; by 1986, fully 94 percent of the cigarettes sold here had built-in filter tips. <sup>48</sup> Because filters remove at least some of the harmful constituents of tobacco smoke, <sup>49</sup> these filtered cigarettes may be perceived by smokers as being "safer", therefore making smokers less motivated to reduce their smoking, or to quit smoking altogether.

Likewise, smokers may feel safer with lower-tar, lower-nicotine cigarettes and therefore be less likely to reduce their smoking habits. In actuality, it has been suggested that people who smoke lower-tar, lower-nicotine brands may increase the number of cigarettes they smoke, deepen the volume of smoke taken in during inhalations, or alter their method of "puffing" to satisfy their physical and psychological dependence on nicotine.<sup>50</sup>

The U.S. market share of cigarettes yielding 15 mg or less of tar increased from 2 percent in 1967 to 56 percent in 1981 (a rise of 270 percent)

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Since then, "low tar" cigarettes have accounted for approximately half of the cigarettes sold in the United States each year.<sup>51</sup> According to the 1986 Adult Use of Tobacco Surveys (AUTS)\*, cigarettes yielding less than 15 mg of tar are more likely to be smoked by women, Whites, and persons with at least some college education.<sup>52</sup>

Cigarette length is another factor that has changed appreciably during recent years. While longer cigarettes (i.e., those measuring 94 mm to 101 mm) accounted for only 9 percent of the U.S. market in 1967, their market share had increased to 37 percent by 1986 (representing a rise of 311 percent).<sup>53</sup> It has been suggested that smokers may change the number of cigarettes or the manner in which they smoke to compensate for the length of cigarettes they are smoking.<sup>54</sup>

Mentholated cigarettes also are more popular among U.S. smokers today than they were in the past. The domestic market share of mentholated cigarettes increased from 16 percent to 28 percent between 1963 and 1976 (a jump of 75 percent), and it remains at this level today. According to the 1986 AUTS, Blacks are three times more likely than Whites to smoke mentholated cigarettes. It is not clear how mentholated cigarettes affect to-bacco consumption or cessation.

# Non-Cigarette Tobacco Products

### **Smokeless Tobacco**

There are two basic types of smokeless tobacco products: snuff and chewing tobacco.

Most common to American consumers is moist snuff, which is a fine-cut tobacco that is usually packaged in small round tins. Brands of moist snuff differ by cut, texture, flavor, and scent. To use this type of tobacco, individuals take a "pinch" of moist snuff between their thumb and forefinger and place it between their lower lip and gum. Dry snuff, which is consumed nasally, is seldom used in the United States.

<sup>\*</sup> The U.S. Department of Health and Human Services' Office on Smoking and Health conducted Adult Use of Tobacco Surveys during 1964, 1966, 1970, 1975, and 1986. These surveys were representative samples of the tobacco-related knowledge, attitudes and practices of the U.S. adult population.

The other common form of smokeless tobacco is chewing tobacco. The chewing tobacco consumed in the United States is generally packaged in pouches and sold as plug tobacco, twist tobacco, or loose-leaf tobacco. It is commonly used as a lump of tobacco—called a "chew" or a "quid"—which is chewed and then held inside the cheek for the flavor of the juices.<sup>57</sup>

Consumption of smokeless tobacco was on the decline during the early 1960s. However, the removal of the federal excise tax on smokeless tobacco products in 1965, coupled with the restrictions placed on cigarette advertising during subsequent years, led tobacco companies to begin to heavily promote the use of smokeless tobacco products as an alternative to cigarette smoking. As a result, U.S. sales of moist snuff rose 55 percent between 1978 and 1984, and chewing tobacco sales increased 7 percent during those years. <sup>58</sup>

According to data gathered from the 1987 BRFS, 3 percent of the Michigan adult population used smokeless tobacco products in 1987. The data in Table 6 show what appear to be higher prevalences of smokeless tobacco use among males, Whites, less educated persons, and younger adults in Michigan. However, the small number of survey respondents who said they used smokeless tobacco means that these data should be interpreted with caution.

National prevalence statistics for smokeless tobacco use can be gleaned from the 1986 Adult Use of Tobacco Survey. These figures are not directly comparable to the Michigan BRFS statistics because of the larger sample size of the AUTS and the fact that this survey used only data from men in calculating the prevalence of use. (The Michigan survey used data from both men and women, a fact that would tend to lower the percentages in each demographic category.)

Nevertheless, like the Michigan data for 1987, the 1986 AUTS data shown in Table 7 indicate that men who are young, White, and less educated than their peers are the most likely to use smokeless tobacco products. More than 10 percent of the U.S. males surveyed in the 1986 AUTS had tried smokeless tobacco. 60

Table 6. Prevalence of Smokeless Tobacco Use in Michigan by Demographic Category, Adults Aged 18 Years and Older, 1987

Demographic Category	Current Use of Smokeless Tobacc
Total Population	3.0%
Age Range:	
18-24 years old	4.6%
25-34 years old	2.6
35-44 years old	2.0
45-54 years old	4.0
55-64 years old	0.9
65 years old or older	2.8
Gender:	
Male	5.8%
Female	0.1
Race:	
White	. 3.1%
Black	2.3
Educational Level:	
2	
Less than high school graduate	4.8%
High school graduate	2.1
Some college	3.9
College graduate	1.6

Source: BRFS<sup>59</sup>

The 1989 Surgeon General's report compared national smokeless tobacco data from the 1986 AUTS with data from the 1970 NHIS. According to that analysis, U.S. males between 17 years of age and 19 years of age showed a 15-times increase in their use of snuff and a four-times increase in their use of chewing tobacco between 1970 and 1986. While it must be noted that there are differences in methodology between the two surveys, it is unlikely that those differences could account for this sharp increase in smokeless tobacco prevalence rates among U.S. teenage males. 62

Table 7. Prevalence of Smokeless Tobacco Use in the United States by Demographic Categories, Current Users, Males Aged 17 Years and Older, 1986

Demographic Category	Current Use of Smokeless Tobacco
Age Range:	
17-19 years old	8.2%
20-29 years old	5.9
30-39 years old	4.1
40-49 years old	5.0
50 years old or older	4.8
Race:	
White	5.6%
Black	3.0
Other	2.9
Educational Level:	
Less than high school graduate	7.3%
High school graduate	<b>5.6</b> :
Some college	3.8
College graduate	0.9

Source: AUTS61

Additional information on the use of smokeless tobacco can be found in a Boyd and associates study of data collected from more than 43,000 U.S. and Canadian students between 1983 and 1985.\* According to their findings, older students were more apt to use smokeless tobacco products than younger students, and male students were more apt than female students to use smokeless tobacco.

Overall, 40 percent to 60 percent of the boys in the surveys said they had tried smokeless tobacco products. In most of the schools surveyed, 10 percent to 20 percent of the older male students said they had used smokeless tobacco during the last seven days.

<sup>\*</sup> The surveys were conducted in 17 schools participating in a National Cancer Institute evaluation of educational programs to prevent tobacco use among children and adolescents. In 12 of these schools, breath or saliva tests were used to verify the students' self-reports of tobacco use.

But, the students' use of smokeless tobacco products varied greatly by grade and by demographic location. For instance, 6.7 percent of 6th-grade boys in New York City said they had tried smokeless tobacco products, while 68.2 percent of 6th-grade boys in rural Montana said they had done so. Likewise, the number of 11th-grade boys reporting that they had tried smokeless tobacco products ranged from 26.0 percent in a suburban/rural Ontario school to 77.5 percent in a suburban/rural Oregon school system.

In every school and in every grade surveyed, at least twice as many boys as girls said they had tried smokeless tobacco. One exception to this gender division was found among the Native American youths surveyed; among this group, the girls' rate of smokeless tobacco use sometimes approached the boys' rate.

Boyd's findings indicated that smokeless tobacco use was very low among Black and Asian edolescents. Although prevalence of smokeless tobacco use was slightly eigher for Hispanic adolescents than for Black and Asian adolescents, it still was lower than for White adolescents.<sup>63</sup>

## **Cigars and Pipes**

Recent years have seen a decline in the popularity of cigar and pipe smoking in the United States, habits practiced almost exclusively by men. AUTS data indicate that the prevalence of both cigar and pipe smoking fell by 80 percent among U.S. men from 1964 to 1986. The proportion of men smoking cigars dropped from 29.7 percent to 6.2 percent during that period, while the proportion of men smoking pipes dropped from 18.7 percent to 3.8 percent.<sup>64</sup> The 1986 AUTS data on the use of these products are detailed in Table 8.

As can be seen, prevalence of cigar and pipe use increases with age (through 65 years of age), with the highest proportion of users being between 45 and 64 years old. Cigar smokers and pipe smokers are more likely to be White than Black, and also are more apt to be either college graduates or persons with less than a high school education.

 Table 8. Prevalence of Cigar/Pipe Smoking in the United States by Demographic

 Categories, Current Users, 1986

Demographic Category	Current Use of Cigars or Pipes	
Total Population	4.3%	
Gender:		
Male	3.7%	
Female	0.3	
Age Range:		
17-19 years old	1.5%	
20-24 years old	2.0	
25-44 years old	4.4	
45-64 years old	5.9	
65 years old or older	3.9	
Race:		
White	4.4%	
Black	3.7	
Educational Level:		
Less than high school graduate	4.9%	
High school graduate	3.6	
Some college	3.9	
College graduate	5.3	

Source: AUTS65

# Smoking Prevalence in the Year 2000

The size of the task of cutting tobacco use among Michigan residents in half by the Year 2000 can be more clearly defined by predicting where prevalence would be at that time without extra intervention or effort.

Pierce et al. used a linear model to predict smoking prevalence in the Year 2000. Assuming no extra interventions, their model indicates that smoking prevalence among the overall U.S. population would fall to 22 percent. This would translate into a 20-percent smoking prevalence for men and a 23-percent prevalence for women. In addition, 25 percent of Blacks would smoke, compared with 21 percent of Whites.

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According to this model, the inverse relationship between educational level and smoking prevalence that has been seen in recent years would continue. Thus, by the Year 2000, persons with less than a high school education would have a smoking prevalence of 31 percent, persons who are high school graduates would have a smoking prevalence of 30 percent, and persons with at least some college education would have a smoking prevalence of 16 percent.\*

Pierce et al. note that their model cannot be used to predict smoking prevalence for those persons who have earned at least a bachelor's degree. But, other models predict that the rate of decline currently seen in this group's smoking prevalence will begin to slow before the Year 2000.66

A projection specific to the Michigan population, also based upon a linear model, estimates that 21.7 percent of Michigan adults would be smokers in the Year 2000.<sup>67</sup> This proportion is virtually the same as the national projection of 22 percent calculated by Pierce and his associates. Thus, these projections indicate that significantly increased efforts are needed to meet the goal of 15 percent tobacco use prevalence in Michigan by the Year 2000.

<sup>\*</sup>Two demographic factors could drive these smoking prevalence figures below Pierce's predicted values: a declining proportion of persons in the population at the usual age of smoking initiation, and an increasing proportion of persons in the age range where cessation usually occurs.

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SOCIAL INFLUENCES ON TOBACCO USE

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Public Information and Education Programs and Services Regulation to Influence Tobacco Use Financial Policies to Discourage Tobacco Use Undoubtedly, the strongest influence on continued use of tobacco products is physical addiction. Nicotine in tobacco is known to create a physiological need for continuing use of these substances, making it very difficult for the tobacco user to quit the habit.<sup>1</sup>

However, environmental factors also influence an individual's decision to use or avoid tobacco products. This chapter will explore the social factors that encourage tobacco use, as well as the social factors that encourage tobacco users to quit or that support non-users in avoiding the habit.

# **Chapter Highlights:**

- Social factors play an important role in influencing an individual's decision to use, or not use, tobacco products.
- The advertising and promotion of tobacco products encourage the use of tobacco, especially among children and adolescents.
- The considerable political strength of the tobacco industry is used to promote public policies that encourage tobacco use, as well as to obstruct public policies that would discourage tobacco use.
- Current social standards condone the use of tobacco products, but this fact is beginning to change.
- Public information about the health hazards of tobacco use can influence individual decisions to avoid tobacco use. It also can help decrease social acceptance of tobacco use.
- The availability of prevention and cessation programs and services helps support those persons who are concerned about tobacco use to avoid, or quit, tobacco habits.
- The most direct way to influence tobacco use is through the regulation of smoking practices.
- Financial policies can be used to discourage persons from starting or continuing tobacco habits.

# Social Factors that Encourage Tobacco Use

# **Tobacco Industry Advertising and Promotion**

One of the leading factors that encourages the use of tobacco products is the unparalleled advertising and promotional campaigns of the tobacco marketers. In 1986, tobacco companies spent more than \$2.3 billion in an effort to sell their products to the American people.<sup>2</sup> These massive efforts are necessary because manufacturers of tobacco products lose almost two million customers each year when tobacco users quit or die.<sup>3</sup> In spite of the tobacco industry's claims that advertisements and promotions are intended only as a means to increase brand share, not to recruit new smokers, marketing experts agree that these efforts are an important component of the drive to bring new people into the market, and therefore maintain sales levels.<sup>4</sup>

Given that 90 percent of new smokers take up the habit before the age of 20, much of this marketing necessarily is targeted toward young people.<sup>5</sup> Other market analyses have shown that the industry also targets minorities, women, and blue collar workers in an effort to maintain sales.<sup>6.7</sup>

Cigarettes are known to be the most heavily advertised product in the United States. Cigarette advertising has been banned from television and radio since 1971, and smokeless tobacco advertisements have been banned from these media since 1986. However, the tobacco industry dominates advertising in the print media. Reports indicate that tobacco companies as a whole were the largest outdoor (billboard) advertiser during 1985. In fact, six of the seven largest outdoor advertisers that year were cigarette companies. The tobacco industry also was the second largest magazine advertiser and the third largest newspaper advertiser during 1985.

Not only are tobacco advertisements prolific, they also are effective. The strong influence of these advertisements can be traced to the appealing images they project. Most tobacco advertisements portray images of sexy, healthy, attractive, and socially successful individuals. The industry's advertisements tie these attributes to the use of tobacco, with little suggestion of the health dangers that also accompany the use of these products.

Children and adolescents are particularly susceptible to these glorified images. Developmentally, their need for self-esteem and acceptance by their peers leaves them vulnerable to the implied promises of these misleading images. The industry's attractive advertising images, in combination with peer pressure, strongly encourage youth to use cigarettes and other tobacco products.<sup>10</sup>

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The influence of advertising on tobacco use also can be felt in other, less direct, ways. Some analysts note that magazines and newspapers receive significant revenues from running advertisements for tobacco products or for the many other products produced by the conglomerates owned by the tobacco industry. This dependence upon tobacco advertisers for income may discourage these news sources from fully discussing the health implications of tobacco use.<sup>11</sup> In *Selling Smoke*, Warner presents both quantitative and anecdotal evidence to support this theory.<sup>12</sup>

In addition to these more traditional forms of marketing, the tobacco companies recently have turned more of their attention—and dollars—to promotional activities. Today, approximately 60 percent of the industry's marketing expenditures are for promotional activities.<sup>13</sup>

Some of these strategies, such as the distribution of free samples, actually place the tobacco products in the hands of the users or potential users. This is important to note, because studies have shown that free samples are the most effective means of getting consumers to try a new product.<sup>14</sup> Tobacco industry representatives have given away free samples of tobacco products at rock concerts, near schools, and in other places frequented by young people, many of whom will become the tobacco users of the future.<sup>15</sup>

Other promotional activities are designed to favorably link the product name with events, activities, or products. These may include corporate or brand name tobacco sponsorships of sporting events, cultural activities, or community programs, inclusion of brand name tobacco products in movies and television programs, and offers for discounted items, such as hats or shirts, that bear the brand name of a tobacco product.<sup>16</sup>

Many of these programs are designed to create a benevolent public image for the American tobacco industry. A clear example is the tobacco industry's support of community fire departments and fire safety programs. Some authors have noted the public relations value inherent in such support, since cigarette-ignited fires are the leading cause of fire fatalities in this country. In this instance, as in others, creating a favorable image for the tobacco industry can help erase public perception of the links between tobacco products and death and disease. In

Many of the marketing strategies used by the tobacco companies do not differ significantly from the ways in which other products are sold. However, one significant factor sets tobacco products apart from the other consumer goods: Tobacco is the only product legally sold in the United States that, *when used properly*, causes death. Unlike other potentially dangerous products, such as alcohol, no safe level of tobacco use has been

identified. Consequently, the influence of tobacco marketing, which serves to encourage the continuation or initiation of tobacco habits, has dangerous health consequences for society.

## **Tobacco Industry Influence on Public Policy**

The tobacco companies are able to encourage the use of their products by influencing tobacco-related public policy. Substantial political and policy advantages have been gained for the industry by what is known as the "tobacco lobby".

As defined in the 1989 U.S. Surgeon General's report on smoking and health, the term "tobacco lobby" refers to "manufacturers and other firms involved in manufacturing, marketing and sales of cigarettes; the Tobacco Institute, the trade association representing the cigarette manufacturers; tobacco farmers and those commercial firms involved in the trading of unmanufactured tobacco; and registered lobbyists representing these interests." The strength of the tobacco lobby is directly related to the political influence of legislators from the Southern tobacco-producing states. 20

#### Federal Influence

On the federal level, there are many ways in which public policy is used to encourage the use of tobacco products, either directly or indirectly. For instance, tobacco products have escaped all federal regulations designed to control consumer products for health and safety reasons. These regulations apply to many other products that are known to be less harmful than tobacco products.<sup>21</sup> If tobacco products were included in such regulations, there would undoubtedly be severe restrictions on the use, sale, and promotion of tobacco products in this country.

Another example of the role of the tobacco interests in public policy-making can be seen in the establishment of the federal prohibition on state regulation of advertising. The tobacco industry received this concession in exchange for agreeing to the Public Health Cigarette Smoking Act of 1969, which banned television and radio advertising of cigarettes. In actuality, the industry was willing to give up such advertising voluntarily, in order to end the free broadcast time for anti-smoking messages being donated by broadcasters through the application of the Fairness Doctrine to cigarette advertising. By striking a deal that does not allow states or localities to regulate tobacco advertising, the industry has ensured that any regulations in this area will come at the federal level, where the tobacco lobby is especially effective.

#### Michigan Influence

Similar examples of how the tobacco industry's power has influenced tobacco-related public policy can be seen on the state level. In Michigan, the tobacco lobby was instrumental in defeating a legislative proposal to ban the distribution of free samples of tobacco products. (As has been noted, the distribution of free samples is a common way in which children and adolescents gain access to tobacco products.) When this legislation was introduced by Sen. Jack Faxon in the Michigan legislature in 1988, it was publicly opposed by the tobacco industry.

In another instance, legislation was passed, but not without being significantly affected by the tobacco interests. In 1988, the Michigan legislature passed the Youth Tobacco Act, which amended an early statute prohibiting the sale of tobacco products to minors. While health advocates were successful in requiring vendors to post a sign warning against sale of tobacco to those under 18 years old, they were unsuccessful in putting a health message on the vendor sign and in gaining an increase in the penalty for selling tobacco products to minors, a penalty that has remained unchanged since 1915. In addition, tobacco interests successfully lobbied Michigan legislators to add provisions to the 1988 Youth Tobacco Act that make prosecution of those charged with selling tobacco to minors more difficult. Such losses can be tied directly to the strength of the tobacco lobby in the state.

In attempting to influence policy, the tobacco industry has been successful in promoting its interests by arguing that tobacco-related issues should be placed within the context of economic benefits to society. The industry has asserted that being anti-tobacco is being anti-business, an influential argument in a state like Michigan, which experienced an economic downturn in the early 1980s.

Realistically, tobacco products contribute very little to Michigan's economic health. Tobacco is not grown in this state, nor are tobacco products manufactured here for commercial sale. In fact, Warner points out that decreased spending on tobacco products actually might improve the economies of non-tobacco-growing states, such as Michigan. As this author explains, decreased spending on tobacco could translate into increased spending on other goods and services, some of which might be produced within the state.<sup>23</sup>

Industry arguments about its contribution to Michigan's economy also ignore the negative impact of the health care costs and lost productivity that result from tobacco-related disease and death. These are the economic contributions that the tobacco industry rarely, if ever, discusses.

#### **Social Acceptance of Tobacco Use**

Unfortunately, despite scientific evidence that shows the dangers associated with the use of tobacco products, social norms that condone, if not encourage, tobacco use still exist. In spite of overwhelming U.S. public opinion that drug abuse is one of the most significant problems facing Americans today, there is a general lack of recognition that tobacco is an addictive product that leads to more death and disease each year than all illicit drugs combined.<sup>24</sup> As a result, nicotine stands today as the one socially acceptable drug addiction in this drug-conscious society.

The fact that the use of cigarettes and other forms of tobacco is socially condoned leads to peer pressure encouraging the use of these products. In fact, studies suggest that the best predictor of children's and adolescents' experimentation with cigarettes is whether their friends smoke. <sup>25,26</sup>

Studies also indicate that whether or not youth begin to smoke is dependent to some extent upon whether their families accept smoking behaviors. Parents and siblings who smoke can serve as role models for the behavior, and children who have family members who smoke are more likely to begin smoking themselves. One study suggests that maternal smoking is positively correlated with smoking experimentation, while paternal smoking contributes to continuation of smoking behaviors. Other authors state that some family characteristics, such as lack of children's involvement in family decision-making, also are correlated with smoking behavior in children.

# Social Factors that Discourage Tobacco Use

During the last 25 years, concern regarding the health dangers of tobacco products has grown significantly. This concern has inspired actions aimed at counteracting the influence of tobacco advertising, the pro-tobacco lobbyists, and social norms condoning tobacco use. As a result, many social factors have begun to discourage the use of tobacco products.

#### **Public Information and Education**

Public information strategies can help deter potential tobacco users and encourage current tobacco users to quit. The goals of such strategies are to

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change the social norm that defines tobacco use as an acceptable activity, and to inform the public regarding the dangerous health consequences of using tobacco products.

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Both children and adults can be influenced by antitobacco messages in the media, whether they are in the form of public service announcements or advertisements sponsored by the major voluntary health associations and public health departments. They also can be influenced by community-based or statewide antitobacco promotional events designed to generate public interest and attention. Whatever the form, such messages offer the advantage of reaching those young people who are no longer in the educational system, as well as high-risk population groups that are known to have a high prevalence of tobacco use.

Examples of such activities abound. Probably the most well-known promotional event is the American Cancer Society's day-long "Great American Smoke-Out", held each November. On this day, current smokers are urged to quit the habit, supported by the knowledge that their cessation efforts are being shared by smokers across the nation. Recently, the American Lung Association proclaimed July 5 as "Non-Dependence Day", a day on which smokers are encouraged to "declare [their] independence from smoking."

In addition to sponsoring such promotional events, the American Lung Association, the American Heart Association, and the American Cancer Society all serve as major sources of information for those persons interested in quitting tobacco use. Each of these groups has affiliates throughout Michigan that provide educational services and materials to state residents.

Associations for health professionals also contribute to the many activities that increase public awareness of the hazards of tobacco use. For example, both the American Medical Association and the American Academy of Family Physicians have developed kits that help their members to be more effective in educating their patients regarding the dangers of tobacco use and in supporting them in their efforts to quit. The American Dental Association has also been active in the antitobacco campaign, producing materials for public distribution on the dangers of smokeless tobacco use and the link between smoking and oral cancer.

One far-reaching effort in antitobacco media information has been undertaken by the Michigan Department of Public Health. In June 1989, the Department launched a statewide broadcast and print media advertising campaign aimed at discouraging pre-teens and women, especially minority women, from smoking. Funding for the campaign is through the Michigan Health Initiative. The pre-teen portion of the campaign uses the theme

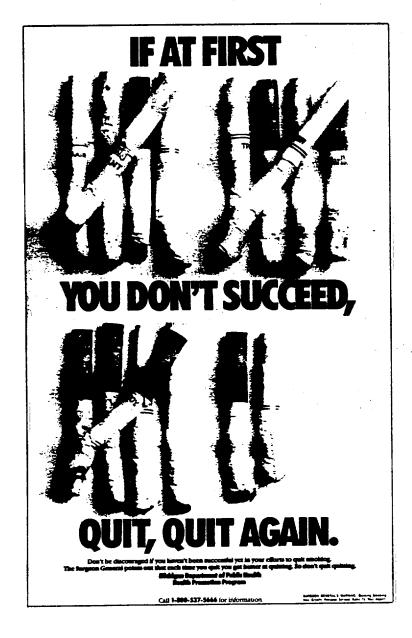
"Smoking Stinks" to encourage the view that cigarette smoking is unattractive. Figure 1 illustrates a poster derived from one of the campaign's television advertisements geared toward the pre-teen audience.

Figure 1. "Smoking Stinks" Poster Aimed at Pre-Teens (Part of Antitobacco Media Campaign by the Michigan Department of Public Health, 1989)



In the portion of the campaign directed toward women, the Department's media messages take an empathic approach to encouraging them to break the cigarette habit. Figure 2 illustrates a print media message from this portion of the campaign that emphasizes the theme, "Don't Quit Quitting". The advertisements include a toll-free "hotline" number that smokers and nonsmokers can call to request printed information on tobacco use and cessation.

Figure 2. "If at First You Don't Succeed, Quit, Quit Again" Print Media Advertisement (Part of Antitobacco Media Campaign by the Michigan Department of Public Health, 1989)



Social Influences on Tobacco Use

Also helping educate the American public about the dangers of tobacco use and the benefits of quitting have been the series of 21 U.S. Surgeon General reports published since 1964 on the health consequences of tobacco use. These reports have included studies of nicotine addiction, smokeless tobacco products, and specific tobacco-related diseases, as well as more generalized tobacco and health-related information. Because they usually have been well-publicized, they have been effective in raising public awareness of the dangers of tobacco use.

Tobacco users also receive ongoing health education messages via the advertising and packaging of tobacco products themselves. The Federal Cigarette Labeling and Advertising Act of 1965 (which became effective in 1966) required that a health warning ("Caution: Cigarette Smoking May be Hazardous to Your Health") be placed on all cigarette packages sold in the United States. Since that time, the requirements for the warnings have been strengthened.

Currently, a set of four rotating health warnings are required on cigarette packages and advertisements. (Outdoor billboard advertisements for cigarettes must carry slightly shorter versions of these same four rotational messages.) A set of three health warnings are required to be rotated on smokeless tobacco packages and advertisements (not including outdoor billboard advertisements).\*

Since 1988, Michigan law has required that the same warnings that appear on smokeless tobacco packages must appear on all outdoor bill-board advertisements for smokeless tobacco products located in the state.

Smokeless tobacco packages must rotate the following warnings:

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<sup>•</sup> The rotational health warnings for cigarette packages and advertisements include:

<sup>1) &</sup>quot;Surgeon General's Warning: Smoking Causes Lung Cancer, Heart Disease, Emphysema, and May Complicate Pregnancy."

<sup>2): &</sup>quot;Surgeon General's Warning: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health."

<sup>3):&</sup>quot;Surgeon General's Warning: Smoking by Pregnant Women May Result in Fetal Injury. Premature Birth: and Low Birth Weight."

<sup>4): &</sup>quot;Surgeon General's Warning: Cigarette Smoke Contains Carbon Monoxide."

<sup>1) &</sup>quot;Warning: This product may cause mouth cancer."

<sup>2) &</sup>quot;Warning: This product may cause gum disease and tooth loss."

<sup>3): &</sup>quot;Warning: This product is not a safe alternative to cigarettes."

Activities undertaken by the coalitions are varied and creative:

- Genesee County's Smoke-Free Multi-Agency Resource Team (SMART) has published a newspaper listing of restaurants and workplaces "friendly" to nonsmokers.
- Marquette County's Tobacco or Health Community
  Coalition sponsored the Tobacco Anti-Smoking
  Project ("Project TAP"), which included a contest in
  which middle school students were asked to
  develop 30-second public service announcements
  concerning the dangers of using tobacco. The
  winning entry was produced professionally and
  distributed to area broadcast and cable facilities.
- Marquette's coalition and the Muskegon Area Coalition for a Smoke-free Environment are working with schools to encourage adoption of smoke-free policies.
- In the Detroit area, an organization called CABAAT
   (Coalition Against Billboard Advertising of Alcohol
   and Tobacco) was organized to fight the practice of
   targeting areas with high minority populations for
   location of tobacco and alcohol product billboards.
   Members of the group are raising public awareness
   of the tactics of tobacco marketers. They also are
   working with local policymakers to develop
   regulatory approaches to the problem.
- Coalitions operating under the Northern-Health Foundation are exploring ways to restrict access to tobacco products by minors.

Such activities combine to create an environment of education and awareness that helps discourage potential tobacco users from taking up the habit, and encourage current tobacco users to quit.

#### **Programs and Services**

Widespread availability of prevention and cessation programs and services conveys a social message about the unacceptability of tobacco use. The goals of such programs are three-fold: to provide information and support that can help encourage those persons who want to avoid tobacco use; to provide assistance for those persons who want to quit their tobacco habits; and to provide skills for those persons who do quit and want to remain tobacco-free.

#### **Prevention Programs and Services**

Usually, primary prevention efforts in tobacco use are mounted through health education programs in the schools. The main health education curriculum for schools in this state is the Michigan Model for Comprehensive School Health Education. The Michigan Model provides consistent and comprehensive health curriculum activities concerning the many aspects of mental and physical health. It also teaches life skills in decision-making, problem-solving, resisting peer pressure, and developing a sense of self-esteem.

Preventing tobacco use is an important component of the Michigan Model. In addition to 16 lessons that deal directly with the dangers of using cigarettes and other tobacco products, the Model includes 20 other lessons that utilize situational examples of tobacco use to teach students decision-making and problem-solving skills. In this way, students not only learn the facts about tobacco and health, but they also learn skills that will enable them to make critical decisions about their own use of tobacco.

By the fall of 1989, the Michigan Model was in place in more than three-quarters of the state's local school districts, covering 981,000 Michigan students. The program was completed for grades kindergarten through eight, and planning was underway to extend the curriculum through the high-school grades.

Tobacco education and prevention efforts within the schools also are one of the primary focuses of the major voluntary health agencies in Michigan (the state chapters of the American Lung Association, the American Heart Association, and the American Cancer Society).

These agencies have combined forces to create the "Smoke-Free Class of 2000" program. Launched in August 1988, this ambitious 12-year

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education and awareness campaign involves children who entered first grade in the fall of 1988 and, thus, are expected to graduate from high school in the Year 2000. The campaign is intended to provide antitobacco educational materials designed especially for these children, their parents, and their teachers. The effort also attempts to focus media and community attention on these youngsters as the symbolic ambassadors of a new smokefree generation.

#### **Cessation Programs and Services**

Some tobacco users quit on their own, while others use self-help materials specifically developed to aid in this process. A well-known example is the American Cancer Society's "I Quit Kit", a package of information that includes booklets, posters, buttons, a calendar, stickers, and other items intended to help tobacco users progress through the cessation process. Another is "Quitting Times", a self-help manual that has been designed specifically for women with children by the Fox Chase Cancer Center and the Pennsylvania Department of Health.

Other tobacco users find it helpful to take advantage of organized cessation services. Organized services usually are offered at the community level through health care settings (such as hospitals or health maintenance organizations). local public health departments. major voluntary agencies, schools and universities, and private clinics.

Most cessation programs take the form of multiple-session group experiences focusing on behavior modification and emotional support for quitting. Some prominent examples are the American Lung Association's "Freedom from Smoking" program, the American Cancer Society's "Fresh Start" program, and the Seventh Day Adventist Church's "Breathe Free—Better Living Seminars".

On Detroit's east side, a coalition of community groups has organized smoking cessation classes at a neighborhood YMCA and a local church. These services are advertised at locations that reach a broad cross-section of the community's population, such as party stores, dry cleaners, churches, restaurants, and other establishments.

Other cessation approaches include: hypnosis; a twelve-step program-called "Smokers Anonymous" (modeled after the concepts of Alcoholics Anonymous): acupuncture; aversion therapy; and other forms of individual counseling.

As more and more employers and unions recognize the benefits of better health and cleaner workplaces to be gained by reducing the number of employees who smoke, cessation services also are becoming available through many workplaces. Many employers provide such services on-site.

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and some permit their employees to participate in such programs during work hours. Other employers reimburse employees, in whole or in part, for the cost of off-site tobacco cessation services.

Through the 1989 Michigan Health Initiative, the Michigan Department of Public Health is administering Worksite Wellness grants to encourage small businesses to provide health promotion activities at their worksites. Grants may be used only for programs that meet criteria developed by the Michigan Department of Public Health. While the Worksite Wellness program is still in its early stages, it is expected that a large percentage of these grants will be used for tobacco cessation programs.

Cessation services also include one-to-one discussions about tobacco use that occur during routine patient visits to health professionals. Physicians, dentists, nurses, and other health professionals can be instrumental in encouraging tobacco users to quit and in supporting those former users who do quit. These professionals come into contact with a great number of potential quitters each year. Because those potential quitters may already be thinking about health matters, they often will heed the advice of these perceived "authority figures" in the health field.

Regardless of the type of cessation service, it must first be visible to the public to be effective in influencing personal decisions regarding tobaccouse. Clearinghouses have been established to disseminate information about these programs.

In Michigan, information on organized cessation services can be obtained toll-free from the Cancer Information Service, operated by the Meyer L. Prentis Comprehensive Cancer Center of Metropolitan Detroit. In April 1989, the Cancer Information Service was able to identify more than 50 classes in the metropolitan Detroit area (including Wayne, Oakland, and Macomb Counties). In addition, the Cancer Information Service can provide callers with information about programs in other areas of the state.

The Michigan Department of Public Health's toll-free "hotline", advertised through the Michigan Health Initiative media campaign, also offers

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information on cessation services in the state, as do the major voluntary health agencies.\*

### Regulation to Influence Tobacco Use

The most direct way to influence tobacco use is through laws and policies regulating this behavior. Regulation which exists in Michigan today addresses two areas: the protection of minors and the protection of non-smokers.

#### **Regulation to Protect Minors**

In Michigan, selling or furnishing tobacco products to minors has been illegal in one form or another since 1889. Michigan Act 77 of 1889 prohibited the selling, giving or furnishing of tobacco to any minor under 17 years of age, "unless upon the written order of the (minor's) parent or guardian." Violation of the provisions of this Act were punishable by a fine of \$5 to \$50 and/or by a jail term of 10 days to 30 days.

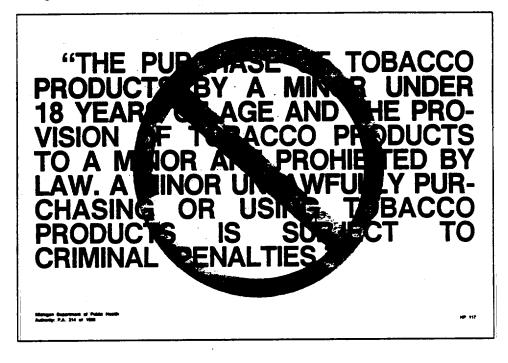
Michigan Act 31 of 1915 revised the premises of the 1889 Act. Under the terms of the 1915 statute, anyone selling, giving, or furnishing cigarettes to persons under 18 years of age faced a fine of up to \$50 or a jail term of up to 30 days for each offense. Minors who used tobacco products could be punished by penalties of no more than \$10 or 5 days in jail.

The recently passed Youth Tobacco Act (Public Act 314 of 1988) did not change the penalties for sales to minors but went a step further by amending these early laws to require that signs be posted at all points of sale for tobacco, warning that tobacco sales to minors and purchases by minors are prohibited. (See Figure 3.) The Youth Tobacco Act also increased the penalties for minors who purchase or otherwise possess or use tobacco products in a public place.

<sup>\*</sup> Toll-free numbers for some of the clearinghouses on tobacco-use are as follows:

Cancer Information Service	1-800-4-CANCER	
Michigan Department		
of Public Health Hotline	1-800-537-5666	
American Lung Association	1-800-678-5864	
American Cancer Society	1-800-227-2345	
American Heart Association	1-800-557-9500	

Figure 3. Sign Warning Against the Purchase or Use of Tobacco Products by Minors in Michigan.



#### **Regulation to Protect Nonsmokers**

The second type of regulation of tobacco use practices is the restriction of smoking in public places. While these actions are based upon the premise of protecting nonsmokers from the health hazards of environmental tobacco smoke, they also may encourage current smokers to quit because of the inconveniences they pose.

The primary example of such a law intended to protect Michigan residents from environmental tobacco smoke is the Michigan Clean Indoor Air Act (MCIAA) (Public Act 198 of 1986), which went into effect Jan. 1, 1987. With the words, "An individual shall not smoke in a public place or at a meeting of a public body, except in a designated smoking area," this law established *nonsmoking* as the norm in public places within the state.

The MCIAA applies to enclosed indoor areas. It affects all public places, meeting places, or workplaces that are owned or operated by state or local governmental agencies, including offices, educational facilities, health facilities, auditoriums, arenas, meeting rooms, and public conveyances. Some public agencies, such as the Michigan Department of Public Health, have complied with the law by prohibiting all smoking in buildings and offices under their jurisdiction.

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The MCIAA also covers some private sites, such as educational facilities, health facilities, auditoriums, arenas, theaters, museums, concert halls, and other privately operated facilities during the period of their use for performances or exhibits of the arts.

Amendments to the MCIAA passed during 1988 extended its scope to include the prohibition of smoking in child care areas of licensed child care centers and child caring institutions. The 1988 amendments also strengthened tobacco use restrictions in hospitals by allowing smoking only in designated smoking areas with ventilation systems that are totally separate from the ventilation system for the rest of those facilities. Hospitalized patients are permitted to smoke in their rooms only by physician's order, and only if their rooms also meet the ventilation requirements. Under these amendments, smoking also is banned in the common areas and treatment areas of private practice offices of health professionals.

A facility covered by the MCIAA must display signs indicating that smoking is prohibited, except in designated smoking areas, and must arrange seating to provide, as much as practicable, a smoke-free area. Enforcement of the MCIAA is the responsibility of the Michigan Department of Public Health. A person or facility who violates the law must be directed to comply and may be subject to civil fines of \$100 to \$500.

In addition to the MCIAA, there are other Michigan laws that restrict smoking in public places. Smoking in Michigan restaurants is regulated under the Michigan Public Health Code (Sec. 12905 of Public Act 368 of 1978 as amended). Restaurants with a seating capacity of 50 persons or more are required to have a nonsmoking area available and to post signs indicating its availability. These guidelines also apply to shopping mall "food courts". Furthermore, Michigan Public Act 39 of 1968 prohibits smoking in grocery stores, while Michigan Public Act 227 of 1967 bans smoking in elevators.

Two cities in Michigan have local clean indoor air ordinances that are stronger than the state law. Marquette and East Lansing both have ordinances that extend clean indoor air provisions to private sector facilities open to the public, such as retail establishments and office workplaces. Both ordinances also limit the percentage of seats in a restaurant that can be in the designated smoking area.

Although they are not covered by the Michigan Clean Indoor Air Act, many private businesses in Michigan have voluntarily regulated smoking in their facilities. Some have chosen to restrict smoking to designated smoking areas, while others have banned smoking entirely, creating totally smoke-free workplaces. Examples of Michigan businesses who have led the way with smoke-free workplace policies are the Michigan Bell Telephone Company and Comerica Inc.

#### Financial Policies to Discourage Tobacco Use

One method of encouraging persons to stop, or avoid, the use of tobacco products is through the use of public sector and private sector financial policies. The rationale behind such policies is that when the use of tobacco products is perceived to be financially detrimental, individuals are likely to reconsider the use of such products.

#### **Public Sector Financial Policies**

The most common example of the public sector use of such policies is tobacco excise taxes. While tobacco excise taxes traditionally have been seen as a means to raise public revenues, health advocates recently have turned to the possibility of increasing these excise taxes as a means to deter the use of tobacco, particularly among children and adolescents.

The appeal of this strategy stems from economic theory. As explained in the 1989 Surgeon General's report on the health consequences of smoking:

One of the few nearly universal relationships in economics is the law of downward sloping demand; that is, demand for a commodity declines as its price increases. Numerous econometric studies have confirmed that this relationship holds for cigarettes. Because excise taxes increase the price of cigarettes, fluctuations in excise tax rates should influence the demand for cigarettes, and excise tax increases should reduce tobacco consumption.<sup>31</sup>

The economic measure of the degree of change in consumer demand that can be expected from a specific change in price is termed *price elasticity* of demand. Lewit, Coate and Grossman calculated the price elasticity of demand for cigarettes among teenagers as -1.2, meaning that a 10 percent increase in price would bring about a 12 percent reduction in consumption of cigarettes among teenagers.<sup>32</sup> According to their findings, teenagers are more sensitive to price changes than adults, primarily because younger people generally have less disposable income and are less addicted to nicotine than adults. Thus, an increase in cigarette excise taxes would be especially effective in discouraging young people from taking up the habit of smoking.

Lewit et al. also suggested that an increase in cigarette excise taxes would cause a decline in smoking among adults, although to a lesser extent. According to their calculations, the price elasticity of demand for adult smokers is -0.42, meaning that a 10 percent increase in the price of cigarettes would result in a 4.2 percent decrease in consumption among adults. This decline in adult smoking would also impact children, since there would be fewer role models of smoking for young persons to emulate.<sup>33</sup>

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During 1987, the federal government, every state, and 389 local municipalities all imposed cigarette excise taxes. The federal government and 27 states also taxed smokeless tobacco products at that time.34

Currently, the federal government imposes an excise tax of 16 cents on a pack of cigarettes, 24 cents per pound of snuff (1.8 cents on a 1.2-ounce can), and 8 cents per pound of chewing tobacco (1 cent on a 2-ounce pouch).35

Michigan presently has no state excise tax on smokeless tobacco products. It does have a state cigarette excise tax of 25 cents for a 20-count pack of cigarettes and 28 cents for a 25-count pack. No city or county in Michigan has an excise tax on tobacco products. Table 1 details the history of cigarette excise taxes in Michigan. During 1987, net state revenue from the Michigan cigarette excise tax totaled \$271.9 million.36

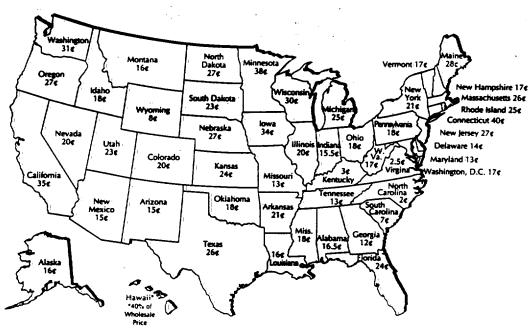
Table 1. Michigan Excise Taxes on Cigarettes, 1947-1988

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Year Excise Tax was Imposed	Total Michigan Excise Tax per Pack
1947	\$ .03
1957	.05
1960	
1961	.05
1962	.07
1970:	.11:
1982	.21
1988:	.25/20-count pack .28/25-count pack

Source: Michigan Department of Treasury<sup>37</sup>

Of the 50 states, Michigan has the 14th highest state cigarette excise tax. Figure 4 shows state cigarette excise tax rates for all states.

Figure 4. State Cigarette Excise Taxes (In Cents per Pack), April 1989



Source: Tobacco-Free America38

The highest state excise taxes are levied in Connecticut (40 cents per pack), Minnesota (38 cents per pack), and California (35 cents per pack). As might be expected, the lowest excise taxes can be found in the Southern tobacco-producing states, namely North Carolina (2 cents per pack), Virginia (2.5 cents per pack), and Kentucky (3 cents per pack).

#### **Private Sector Financial Policies**

Insurance policies can provide a disincentive for tobacco use by offering reduced insurance premiums for nonsmokers.

Premium discounts for nonsmokers are common among life insurance companies, whose actuarial studies have confirmed the lower life expectancies of smokers. According to the Center for Corporate Public Involvement, 89 percent of life insurers responding to a 1986 survey stated that they offered premium discounts on individual life insurance policies based upon health-related behaviors. Fourteen percent also offered such discounts on group life insurance policies. According to industry sources, the average

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health-related discount among life insurance companies ranges from 12 percent to 25 percent.<sup>40</sup>

In spite of large health care costs incurred through the treatment of smoking-related diseases, few health insurers offer discounts to nonsmokers. The Center for Corporate Public Involvement survey cited above indicated that 23 percent of insurers offered premium discounts for nonsmokers on individual health insurance policies, while 14 percent offered such discounts on group health insurance policies. Responses from health and disability insurers to a National Association of Insurance Commissioners survey indicated that 14 percent of commercial insurers and 16 percent of Blue Cross/Blue Shield plans offered discounts to nonsmokers. These discounts averaged 9 percent to 10 percent. 2

Reduced premiums for nonsmokers are slightly more common in property and casualty insurance coverage, a fact that recognizes that cigarettes are the major cause of residential fires in this country, with attendant losses of property and lives.<sup>43</sup>

In addition to the offering of reduced premiums, insurance companies can encourage the cessation of tobacco use by offering health care coverage for cessation services. It is often asserted that inclusion of a service in the benefit package of a health insurance policy will encourage use of that service. Therefore, health care insurers can play a major role in accelerating progress toward a smoke-free society by including coverage for cost of tobacco cessation services in health insurance policies. Today, unfortunately, few health insurers offer such coverage. Most of those that do only cover the cost when smoking-related disease is already present, reflecting the industry's reluctance to cover services that are considered prevention-based, rather than treatment-based.

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The recommendations of the 1989 Michigan To-bacco Reduction Task Force comprise a comprehensive approach for reducing the use of tobacco products in Michigan by 50 percent by the Year 2000. These recommendations are bold statements on the actions that are needed to counteract the addictive nature of tobacco products and the aggressive marketing of the tobacco industry.

The recommendations include strategies for preventing our children from developing the tobacco habit, helping current tobacco users to quit, and protecting all of us from the harmful health effects of environmental tobacco smoke. Each of the recommendations emphasizes that tobacco use should not be the norm in our society. Together, they constitute a framework of complementary actions to be implemented during the next 10 years, actions that will make a significant impact on the needless death and disease caused by the use of tobacco products.

The recommendations remind us that, in order to reduce the health consequences of tobacco use, we must focus on all nicotine-bearing products. In the past, it may have been enough to focus on cigarettes, cigars, and pipes, the main forms of tobacco use during the 20th century. But today, increased attention must be paid to smokeless tobacco products such as snuff and chewing tobacco, cancer-causing substances that are increasingly popular among our young people. We also must be aware of attempts by tobacco manufacturers to develop alternative nicotine delivery devices that are marketed as safer or less offensive alternatives to cigarettes.

Achieving the long-term goal of significantly reducing tobacco use in Michigan will be a major undertaking, requiring the commitment and cooperation of individuals and groups willing to invest in the health of Michigan's citizens. The groundwork for these efforts has been laid by policy-makers, health and education organizations, and individual citizens who have recognized the tremendous toll that tobacco use takes on our society. During the past decade, their work has led to passage of the Michigan Clean Indoor Air Act and the Youth Tobacco Act, and to the development of tobacco use prevention and cessation programs throughout the state.

But, the work is not finished, because human and economic resources continue to be drained by the use of tobacco products in Michigan. Thousands of the state's residents die each year from tobacco-related disease. Millions of Michigan citizens remain addicted to tobacco. And the tobacco

industry recruits our children and adolescents as replacements for the approximately 126,000 Michigan tobacco users who die or quit the habit each year. Obviously, much remains to be done to help those who use tobacco to overcome their dependency and to prevent our young people from becoming addicted.

All Michigan citizens must join in reducing tobacco use and its health consequences among Michigan residents by the Year 2000. The following recommendations of the 1989 Michigan Tobacco Reduction Task Force provide a comprehensive blueprint for this effort.

I. Aggressive measures must be taken to prevent children and adolescents from gaining access to cigarettes, smokeless tobacco, and other tobacco products.

Most people who use tobacco begin the habit before the age of 20. Studies have shown that children as young as seven or eight are experimenting with cigarettes and smokeless tobacco, and many are becoming regular users soon after.

The use of tobacco products by children and adolescents raises serious concerns. Persons who become addicted to tobacco at a young age are at higher risk for developing various smoking-related diseases in adulthood. In addition, several studies have indicated that children who use tobacco products are much more likely to experiment with other types of drugs.

Social attitudes toward the use of tobacco by minors have been contradictory: While it is illegal for persons under the age of 18 to use tobacco products in Michigan, adults often overlook this behavior in adolescents. and the law is seldom, if ever, enforced.

Preventing children and adolescents from becoming addicted to tobacco products must be of primary concern in reducing the use of tobacco in Michigan. Restricting minors' access to cigarettes, smokeless tobacco and other tobacco products is an important component of this plan.

Therefore, the Task Force recommends that:

- A. State law should require a license for the retail sale of tobacco products, renewable on an annual basis. Licensing regulations for tobacco retailers should include the following provisions:
  - 1. Tobacco retailers have an affirmative obligation to seek proof of age from tobacco customers.

- 2. Tobacco retailers must be located a minimum of 500 feet from K-12 schools or licensed child care agencies.
- 3. Tobacco retailers should be charged an annual retail license fee that is at least comparable to that paid by beer and wine retailers in the state. A minimum of 50 percent of the annual tobacco retail license fee should be equally distributed among administration of the licensing act, enforcement of the Youth Tobacco Act, and tobacco prevention and education activities.

Surveys suggest that underage children and youth primarily obtain cigarettes and smokeless tobacco products by purchasing them from retailers, not by receiving them from friends or parents. Estimates of the number of retail outlets for tobacco products in Michigan range from 40,000 to 60,000. This abundance of tobacco vendors makes these products easily accessible to youth and frustrates enforcement of the Youth Tobacco Act, which prohibits sale of tobacco products to persons under the age of 18.

Although most states take a vigorous legal approach to restricting minors' ability to buy alcohol, there are few examples of equally vigorous efforts regarding tobacco, in spite of the fact that tobacco may pose a greater long-term threat to health than alcohol. In Michigan, retailers must have a special license to sell alcohol, but there is no comparable license for the sale of tobacco. The State should establish a license for the retail sale of tobacco products. This licensing requirement may reduce the number of outlets for tobacco products, which in turn could restrict minors' access to these products.

Through licensing, the State also can demand greater compliance with the Youth Tobacco Act by making license revocation the ultimate penalty for sale of tobacco to minors. Revenues from licensing fees should be used to fund increased enforcement of the Act, as well as other prevention activities.

An alternative approach would be to permit the sale of tobacco products only through vendors licensed to sell beer and wine. This approach would avoid duplication of licensing administration, reduce the number of retail tobacco outlets, and increase public perception of tobacco as a substance harmful enough to warrant regulation.

# B. State law should prohibit the sale of tobacco products through vending machines.

It is easy for minors to obtain tobacco products through vending machines. Tobacco vending machines often are not supervised and are located in areas that are accessible to children, such as the outer lobbies of restaurants or vending machine service areas of large buildings. Furthermore, cigarettes are sometimes sold in the same vending machines as candy, snack foods, and other items of interest to children and adolescents. A Canadian study suggests that younger children are especially apt to use vending machines for tobacco purchases.

Colorado has banned vending machine sales of smoke-less tobacco. White Bear Lake (Minnesota), a suburb of St. Paul, recently passed the nation's first local ordinance banning cigarette vending machines. Such local prohibitions are also under consideration in several municipalities in Michigan's Upper Peninsula, following a series of public hearings on the topic.

Some states have taken a weaker approach to this problem by restricting the placement of tobacco vending machines to supervised areas or to areas thought to be inaccessible to minors. However, defining such areas and monitoring the supervision of vending machines raise legal and practical concerns. In order to restrict the ability of children and youth to purchase cigarettes, smokeless tobacco, and other tobacco products, the State of Michigan should ban the sale of tobacco products through vending machines.

- C. An aggressive, prevention-based state tobacco excise tax policy should be established.
  - 1. An excise tax of 70 percent of the wholesale price should be established for all tobacco products sold in Michigan.
  - 2. The tax should be calculated once per year, and should be based upon the average wholesale price of tobacco products during the previous year.
  - 3. All revenues from state tobacco excise taxes should be earmarked for health-related activities, with at least 50 percent dedicated to tobacco use prevention, cessation, education, and enforcement activities, without reduction in existing funding.

Tobacco excise taxes generally have been viewed solely as a means of raising revenue. But, recently, health advocates have recognized taxation as a strategy for preventing the use of tobacco and for encouraging current tobacco users to quit.

Support for this strategy comes from the economic fact that fewer people buy a product as its cost goes up. An economic measurement called "price elasticity of demand" predicts the decrease in consumption of a product that follows an increase in its price. Thus, an increase in the excise tax on cigarettes will cause the price to go up, and this will result in fewer cigarettes being purchased and fewer people smoking. Specifically, economists predict that a 10 percent increase in the price of cigarettes will result in a 14 percent decrease in the prevalence of smoking among 12-to 17-year-olds. Smaller percentage decreases will occur in older age groups due to their stronger nicotine addiction and larger incomes.

The State of Michigan should use this strategy to reduce the use of tobacco products among children and youth. An excise

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tax equal to 70 percent of the average annual wholesale price should be established for all tobacco products sold in the state. This would represent an approximate doubling of the current tax of 25 cents per pack levied on cigarettes in Michigan. It is estimated that a tax increase of this magnitude would, by itself, reduce smoking prevalence among 12- to 17-year-olds by as much as 20 percent.

Levying this tax on smokeless tobacco products, which are currently not taxed by the State of Michigan, will significantly reduce the use of smokeless tobacco products and simultaneously draw public attention to the dangerous nature of these products.

Changing from the present unit tax system, which imposes a fixed amount of tax on each pack of cigarettes, to a percentage (ad valorem) tax system ensures that the tax retains its value as a proportion of the total cost. Therefore, as the cost of the product increases, the tax will increase accordingly. A percentage tax will maintain its ability to deter individuals, especially children and adolescents, from purchasing tobacco products. Hawaii imposes a percentage tax on cigarettes, and many states use this type of tax system for smokeless tobacco.

It has been suggested that tobacco users would be more likely to respond to larger tax increases imposed on a periodic basis than to a steady, gradual increase in the tax. Consequently, the value of the 70 percent tax should be calculated annually, based upon the average wholesale price of the products during the previous year, and held constant for one year before being recalculated.

The increased tax on cigarettes and the new tax on smokeless tobacco and other tobacco products will generate a total of approximately \$699 million in annual revenues. This is more than twice the revenues from the excise tax that is currently collected on cigarettes in Michigan. The revenues should be earmarked for health activities, with at least 50 percent earmarked for tobacco-related prevention, cessation, education, and enforcement. These revenues should supplement and not replace, state and federal funds currently appropriated for these activities. In addition, they should be distributed equitably throughout the state.

# D. State law should prohibit the distribution of free or discounted tobacco products, as well as the distribution of tobacco products through the mail.

In recent years, the tobacco industry has begun to shift its marketing emphasis from advertising to promotional activities. Some of these promotional activities place the products directly in the hands of the consumer through the distribution of free samples of cigarettes, smokeless tobacco, and other tobacco products.

Although it is illegal in Michigan to give tobacco products to minors, it is difficult to control the distribution of free samples. The tobacco industry's voluntary code forbids distribution of tobacco to minors, but national studies have shown that persons hired to distribute free tobacco samples seldom check the age of their recipients.

Similar problems result from advertisements that offer free product samples or retail sale of tobacco products by mail. While mail-in order blanks usually require senders to certify that they are not legal minors, it is impossible to verify these statements.

Since it is virtually impossible to ensure that free tobacco products are not given to minors, the State of Michigan should ban all distribution of free samples of tobacco products. This action has been taken by the states of Minnesota and Utah, and by at least 15 cities across the country. Coupons, rebates, or other devices that reduce or eliminate the retail price of tobacco products also should be prohibited, since they have the similar effect of making tobacco products more accessible to children and adolescents.

Similarly, distribution of tobacco products through the mail enables minors to obtain cigarettes and smokeless tobacco without supervision. State law should prohibit such distribution of both purchases and free samples of tobacco products.

The Michigan Youth Tobacco Act requires that a sign be posted at all points of sale warning that the sale of tobacco products to minors is illegal and that minors who purchase tobacco are subject to criminal penalties.

The size, wording, and type size for the sign are specified in the law. As it stands, the sign is difficult to read and the design cannot quickly be identified as warning against the sale of tobacco products to minors.

Other states have developed warning signs that present a clearer message in a format that is more readily identifiable to the general public. The sign from Massachusetts (included in Appendix C) is an example. The Michigan Legislature should amend the Youth Tobacco Act to require that Michigan's sign be redesigned to make it more effective in meeting its purpose of deterring tobacco sales to, and purchases by, minors.

Furthermore, the current law does not include penalties for retailers who fail to display the sign. Such penalties should be added to the Youth Tobacco Act.

# F. State law should prohibit billboards and other indoor and outdoor signs advertising tobacco products.

In spite of tobacco industry assertions to the contrary, marketing experts claim that advertising portrays the use of tobacco products as a sexy, fun, healthy, and adult activity that makes the user socially attractive. These media messages are particularly enticing to impressionable children and adolescents, who are drawn by the advertisements to experiment with these products. In effect, the industry's advertisements encourage children to engage in illegal behavior.

Billboards and other prominently displayed advertising signs that are located in places such as main roadways, sports arenas, and supermarkets are of particular concern, because the exposure of children to these messages is virtually unavoidable. In addition, such tobacco signs are concentrated in inner city neighborhoods, making low income and minority youth particularly vulnerable to the misleading messages of the advertising.

States are beginning to take action against billboard advertising of tobacco products. Utah has prohibited tobacco advertising on billboards, streetcars and buses, placards, or "any other object or place of display." A proposal to ban billboard advertising of tobacco and alcohol products has been introduced before the Massachusetts legislature. Four states—Alaska, Hawaii, Maine, and Vermont—prohibit billboard advertising of any products.

Because viewing advertisements for tobacco products on billboards, placards, posters, displays, figures, paintings, and other types of signs is unavoidable and induces young persons to participate in what is, for them, an illegal activity, Michigan law should prohibit billboard and other indoor and outdoor advertising of tobacco products.

G. State law should prohibit breaking up packages of cigarettes, small cigars, or smokeless tobacco products for the purpose of selling individual items or portions.

It is a retail practice in some areas of the state, particularly in Detroit, to open packs of cigarettes in order to sell them individually. These individual cigarettes sell for about 10 cents each, making them generally more affordable to young people, who might be unable to pay for an entire pack.

In addition to encouraging children and youth to buy cigarettes, this practice raises other concerns. Selling individual items or portions that are not sealed makes them vulnerable to tampering and violates basic sanitation practices. Furthermore, such sales circumvent federal law that requires health warning labels on all cigarettes and smokeless tobacco sold.

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The State of Maine has passed a law prohibiting the sale of individual tobacco products that have been removed from their intended retail packages. The Michigan legislature should follow Maine's lead in protecting the health and safety of Michigan's citizens.

# II. Stronger efforts must be made to protect Michigan residents from the adverse health effects of environmental tobacco smoke and from fires caused by smoking materials.

The adverse health effects of tobacco are not restricted to smokers. Well-documented studies confirm that both adults and children who are exposed to environmental tobacco smoke experience temporary and permanent health effects, particularly if exposed on a regular basis. Also, both smokers and nonsmokers are frequently the victims of cigarette-ignited fires. Given today's knowledge of the health risks associated with exposure to second-hand tobacco smoke, both public and private sectors must establish policies that acknowledge nonsmoking as the norm, and actively protect the health and safety of those citizens who do not smoke.

Therefore, the Task Force recommends that:

### A. The Michigan Clean Indoor Air Act should be extended to the private sector.

The current Michigan Clean Indoor Air Act (MCIAA) limits smoking in public places to designated areas, thus reducing exposure to environmental tobacco smoke for employees and the general public who use such facilities. With few exceptions, however, the law offers little protection to persons in private workplaces.

The State of Michigan should follow the example set by the cities of Marquette and East Lansing, and at least 14 other states, in passing clean indoor air standards that recognize nonsmoking as the norm in private, as well as public, workplaces. This policy would extend to all workers the same advantages of tobacco-free air in the workplace now enjoyed by public employees.

Current trends support expansion of clean indoor air requirements into the private sector. For instance, the Michigan Department of Public Health reports that a considerable number of the calls received with complaints about environmental tobacco smoke are from employees in private workplaces, who are not protected by the MCIAA.

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Furthermore, expanding the MCIAA would help protect employers from liability for smoking-related illness caused by exposure to environmental tobacco smoke in the workplace. Court cases such as *Shimp v. New Jersey Bell Telephone Co.* and *Smith v. Western Electric Co.* affirm the obligation of an employer to provide a work area free from unsafe conditions, including environmental tobacco smoke.

Americans for Nonsmokers' Rights has developed a model statute that could be used as a basis for expanding Michigan's clean indoor air policies. (See Appendix D.)

State and local government administrators should take the lead in promoting clean indoor air in the private sector prior to passage of a state law. For example, government contracts should require that all firms doing business with the State, or with a Michigan county or municipality, have clean indoor air policies in place at their Michigan facilities. These policies should have clean indoor air standards at least as stringent as those required of public facilities under the MCIAA.

B. State law should require that at least 50 percent of seats in all restaurants be designated as nonsmoking. Ambiguities in the laws regulating smoking in restaurants should be removed, making seating, ventilation, and compliance provisions of the Michigan Clean Indoor Air Act apply to restaurants.

Under current Michigan law, restaurants with 50 seats or more must designate a specific number of their seats as nonsmoking. (This number is roughly equal to 12 percent to 24 percent of their seating capacity.) An amendment requiring that at least half of seating in all restaurants be designated as nonsmoking would greatly reduce patrons' exposure to environmental tobacco smoke and its related health risks. This requirement also would more closely reflect the fact that more than 85 percent of the state's residents (adults and children combined) do not smoke. Such a law would be an additional step toward making all Michigan eating establishments smokefree.

Current Michigan law is unclear regarding other smokingrelated restrictions on restaurants. The following seating, ventilation, and compliance provisions in the Michigan Clean Indoor Air Act should apply to restaurants:

- Restaurant owners or operators should be required to develop and implement a written policy which includes procedures for receiving and handling complaints.
  - Nonsmoking seating should be contiguous.
  - Prevailing air flow should be toward the smoking area.
- •Nonsmokers should be seated nearest to the source of fresh air, such as supply air grilles or diffusers; smokers should be located nearest to exhaust fans or return air grilles.

# C. The State of Michigan and local governments should provide for totally smoke-free travel on intrastate and local public conveyances.

While it is common practice to designate smoking and nonsmoking sections on public conveyances, studies have shown that this is seldom adequate to protect passengers and workers from environmental tobacco smoke. Stronger regulation of smoking on public transportation is needed.

The State and local governments should require smoke-free travel on all public conveyances, except where such action is preempted. (For example, states and localities have little jurisdiction over smoking on AMTRAK trains. Even federal regulations regarding smoking on these trains were repealed in 1979, when the federal government gave control of the train system to the AMTRAK corporation.)

The federal government has jurisdiction over smoking on commercial airplanes. Since 1988, federal law has banned smoking on regularly scheduled domestic airline flights of two hours or less. In February 1990, the ban will be extended to all domestic flights of six hours or less, thereby establishing smokefree travel on all commercial airplanes, except during certain flights to Alaska and Hawaii.

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Operators of local bus lines in Michigan generally prohibit smoking on scheduled runs, but such restrictions have not been established in public policy nor have they been adopted by many taxi services or intercity bus companies. Legislation should be adopted to require that local public transportation authorities and privately owned bus and taxi companies provide totally smoke-free travel in all vehicles operated within the state, including buses, trolleys, trams, and taxis.

D. Smoke-free housing should be available to all persons living in institutional settings, including colleges and universities, licensed residential mental health facilities, correctional institutions, and licensed substance abuse treatment centers.

Persons living in institutional settings cannot control the environment in which they live. In settings such as these, the State or other sponsoring institution has a responsibility to ensure that nonsmokers are protected from hazardous environmental tobacco smoke and that the risk of smoking-related fires is minimized.

Residence halls in Michigan colleges and universities should offer a smoke-free living option to all students applying for housing. While some Michigan schools offer smoke-free rooms to those students requesting them, few offer housing in totally smoke-free buildings. Smoke-free buildings are necessary because ventilation systems typically do not adequately clear the air of tobacco smoke.

Persons living in residential mental health facilities frequently lack the judgement needed to make informed decisions regarding their own health or safety. In these cases, administrators of public and private facilities have a special obligation to protect residents from the dangers of environmental tobacco smoke and cigarette-ignited fires.

As a rule, the structural designs of prisons and jails pose special problems in protecting residents and staff from environmental tobacco smoke. Some facilities, such as the county jails in Muskegon, Grand Traverse, Kalamazoo, Jackson, Eaton, and Ottawa counties, have become totally smoke-free in

an effort to reduce exposure to environmental tobacco smoke. Other correctional facilities in the state, including those for youth, should be encouraged to adopt smoke-free policies. Assurance of smoke-free living areas should be a requirement in the design of new correctional facilities in Michigan.

It has been estimated that 80 percent to 90 percent of persons with substance abuse problems are also addicted to nicotine. Because smoking seldom has been banned in substance abuse treatment centers, nonsmokers have risked substantial exposure to environmental tobacco smoke when participating in treatment. Treatment providers have a responsibility to protect nonsmokers from this hazard by providing smoke-free environments.

E. State law should continue to support Michigan communities in enacting tobacco control ordinances stronger than those of the State. Efforts to establish state preemption of these ordinances should be opposed.

The cities of Marquette and East Lansing have enacted aggressive smoking control ordinances, and such actions are supported by state law. Michigan's Public Health Code allows local communities to pass health ordinances which are stronger than state health laws.

The likelihood of success in gaining strong smoking controls at the local level is great. While the tobacco interests have effective monitoring and lobbying capabilities on the state level, they are less equipped to track and influence policymaking activities on the local level. Furthermore, local government often involves greater participation by the general public, which is known to favor restrictive smoking laws. A network of strong local ordinances also will offer political

In an effort to circumvent the growing number of strong local tobacco control ordinances, the tobacco industry has begun to lobby aggressively for state legislation prohibiting localities from passing tobacco control ordinances that are more stringent than the state law. They have been successful in states

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such as Virginia, Florida and Pennsylvania. The Michigan legislature should resist attempts to prohibit strong local tobacco ordinances in Michigan.

F. Air quality standards should be established for the total combined components of tobacco smoke, which has been declared a toxic substance by the Michigan Toxic Substance Control Commission.

In spite of the fact that tobacco is known to be a greater health risk than other substances controlled by the federal government, the tobacco industry has been successful in avoiding federal regulation of tobacco for health or safety reasons. Since tobacco has been declared a toxic substance at the state level, Michigan policy-makers should take this opportunity to protect Michigan residents from the hazards of this substance.

Standards should be set for the maximum concentration of environmental tobacco smoke allowed in indoor areas. The Michigan Department of Public Health should work with the appropriate state regulatory agencies to achieve this goal. There are currently no such standards for the combined elements of tobacco smoke, although standards have been set for many of the individual components.

At least two states have officially recognized tobacco as a toxic substance. Massachusetts has classified oral snuff as a hazardous substance. California law, which identifies tobacco as a carcinogen and a reproductive toxicant, requires businesses to post warning signs in areas where tobacco smoke is present: "WARNING: This facility permits smoking, and tobacco smoke is known to the State of California to cause cancer."

G. The State should establish fire safety standards for all combustible tobacco products sold in Michigan.

In 1987, a special federal study group determined that a self-extinguishing cigarette could be developed that would significantly reduce the potential for starting fires. Smoking

materials are the major cause of fatal fires in this country. Many of these victims are children. In Michigan alone, 17 percent of all fire deaths and 11 percent of all fire injuries in 1988 were smoking-related. That same year, \$20.3 million of property was lost in Michigan due to fires ignited by smoking materials.

The tobacco industry has worked to prevent the enactment of fire safety standards on the federal level, in part to avoid the precedent of any health or safety regulation of cigarettes. Most recently, the industry has supported a congressional bill that would require further study of this question, thereby delaying the debate and decision.

Michigan can defeat this strategy by establishing meaningfulfire safety standards for combustible tobacco products sold within its boundaries. As an added benefit, action by one state may very well lead to tobacco manufacturers adopting these standards industry-wide in order to forestall similar action in other states. III. Tobacco users must be offered information, assistance, and continued support for quitting and remaining tobacco-free. Special attention must be given to minorities, persons with low income, and other groups with high levels of use.

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Surveys have shown that most tobacco users would like to quit, and many have tried repeatedly. The addictive nature of nicotine, coupled with social factors and marketing practices that encourage tobacco use, make it difficult to break the habit. Three elements must be present to successfully quit using tobacco.

First, tobacco users must be motivated to quit. Health consequences, social pressure, or other factors must be sufficient to make tobacco users want to overcome their addiction to these products. Secondly, tobacco users must receive assistance in quitting in the form of encouragement, information, and/or cessation services. Efforts are currently underway to identify those aids to quitting that can be most effective. And finally, former tobacco users must have continued support for remaining tobacco-free. This help can include personalized encouragement as well as public policy measures that discourage the use of tobacco products.

Groups in special need of such services are those which appear to have higher than average rates of tobacco use, including minorities, those without a college education and those with low incomes. These groups also are least likely to have access to services because of cost constraints, lack of available services, or lack of services which are culturally or socially sensitive and appropriate.

Therefore the Task Force recommends that:

A. Physicians, dentists, nurses, pharmacists, substance abuse counselors, and other health professionals should make stronger efforts to identify tobacco use among their patients or clients, and advise and assist them to quit.

According to former U.S. Surgeon General C. Everett Koop, smokers whose doctors help them quit are up to six times more likely to kick the habit. And yet, studies show that most smokers have not been advised by their physicians to quit.

Because physicians, dentists, nurses, pharmacists, substance abuse counselors, and other health professionals are perceived as authorities on health matters, they can have a significant impact upon smoking and the use of smokeless tobacco in Michigan. The frequency with which tobacco users visit these health professionals, coupled with the individualized nature of the visits, provides many opportunities for assessment, intervention and assistance.

For health professionals to be successful in helping people to quit, several factors must be present. First, these professionals must be aware of patients' or clients' tobacco use habits. Next, they must possess basic skills in effective counseling for tobacco cessation. And, following intervention, they should actively monitor the individuals' cessation efforts and provide support as needed.

As role models of good health behavior, health professionals have a special responsibility to stop smoking themselves. Those who continue to use tobacco products are hampered in their ability to present a strong and credible message to their patients or clients regarding the dangers of tobacco use and the need for quitting these habits.

Substance abuse counselors have a special opportunity to help in tobacco use cessation efforts, because it has been estimated that 80 percent to 90 percent of persons with alcohol or other drug problems are addicted to nicotine. Yet, most substance abuse treatment programs overlook tobacco use in treating addictions. Surveys have shown that many substance abuse clients are interested in breaking the tobacco habit when help is available. Substance abuse treatment providers should encourage clients to quit tobacco use, offer cessation services, and provide tobacco-free facilities to their clients.

B. Medical schools, dental schools, nursing schools, pharmacy schools, and other educational programs for health professionals and counselors should develop and implement curricula on tobacco use and methods of encouraging self-motivation and assisting tobacco users to quit.

Because the use of tobacco products has a major impact on health, information on tobacco use and quitting interventions should be an important component of educational programs for health professionals. While most of these programs provide education on the management of tobacco-related disease, less attention usually is focused on its prevention.

There is a wealth of knowledge available regarding tobaccorelated disease and tobacco cessation interventions. The basic curriculum of programs which train health professionals should include components on the identification of tobacco use among patients and clients, and how to encourage and assist tobacco users to quit.

Once in practice, health professionals have a responsibility to remain informed about new developments in tobacco-related disease research and cessation interventions. Few continuing education programs are offered currently that help practitioners to identify patients and clients who use tobacco and to learn methods to help them quit. Agencies and institutions that provide continuing education for health professionals should increase their offerings in these areas.

In addition, these organizations should provide health professionals with materials to help patients or clients interested in quitting smoking or the use of smokeless tobacco. Such resources might include print and audio-visual materials, as well as self-help brochures for office waiting rooms. Health professionals also should have information on community cessation programs for the purpose of referring patients or clients.

# C. Tobacco cessation services should be available in a wide variety of settings, especially those accessible to populations with high levels of tobacco use.

Traditional concepts of health care must be adapted to meet the varied needs and abilities of the many people addicted to tobacco. In order to reach all tobacco users, and especially those who may not be a part of established health promotion or health care systems, cessation services should be available in a wide variety of settings. These settings should include, but not be limited to, businesses, voluntary agencies, local health departments, neighborhood centers, schools, colleges, universities, and health care settings (especially those providing prenatal care).

A community-based approach to reducing tobacco use offers a number of advantages. Such efforts can be tailored to meet the needs and practices of target groups and can be coordinated with services and systems already in place within the community. Coalitions made up of representatives of groups concerned about tobacco reduction, and particularly those that can effectively reach high-risk populations, should generate progressive, creative programs and services for community residents.

A good example of an innovative program for tobacco cessation can be found on Detroit's east side. There, a coalition has developed a comprehensive program that provides free "stop smoking" classes at a neighborhood YMCA and a local church. Posters advertising the services are placed in party stores, dry cleaners, churches, restaurants, barbershops, and beauty salons throughout the neighborhood, ensuring that the information is easily available to community members.

# D. A voluntary system of quality assurance should be established for tobacco cessation providers and programs.

Tobacco cessation programs span a wide range of methods and providers, reflecting the market's response to the varied needs of the individuals seeking cessation services. Criteria must be developed to allow assessment of the quality and effectiveness of cessation services. Such a task will not be simple, but it is the necessary foundation of any quality assurance effort. A voluntary system of credentialing based upon such criteria will help tobacco users evaluate the options available to them and make appropriate choices.

This quality assurance system also could help employers and insurance companies in their efforts to reimburse for cessation services by giving them an objective standard for determining which providers and programs are eligible for reimbursement.

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E. Michigan residents should have access to tobacco cessation services that meet minimum criteria for quality and effectiveness, regardless of ability to pay.

The cost of tobacco cessation services can vary greatly, depending upon the type of program or service. While many services are affordable to those who must pay for them out-of-pocket, other services are highly priced, making them unavailable to many. Even low-cost services may be beyond the ability of low-income persons to pay.

Economic status should not prevent individuals from obtaining tobacco cessation services. Funding should be made available for effective cessation services for all Michigan residents without ability to pay.

The State should include coverage for tobacco cessation services and nicotine-replacement therapies under the Medicaid and General Assistance Medical programs. This would allow persons on public assistance to use payment systems already in place to cover the cost of services. To encourage providers to accept this method of payment, the Medicaid and General Assistance Medical programs should fully reimburse for cessation services.

In order to fill the gap for those who are not covered by insurance and who do not have sufficient personal resources, tobacco cessation services should be designated as a basic health service under the Michigan Public Health Code.

Funding to support making cessation services accessible to all Michigan residents should come from a portion of state tobacco excise tax revenues earmarked for cessation services. Many states, including Minnesota, Utah, California and Nebraska, dedicate a portion of tobacco excise tax revenues to tobacco-related health activities.

In recent years, the Governor. State Legislature, and organizations throughout the state have begun to explore various methods of ensuring that all individuals in Michigan will have access to health care services. Because tobacco cessation can be a relatively low cost means of preventing many diseases, cessation services should be included as an essential element in any discussions of statewide health care programs.

# F. Employers, unions and insurers should work cooperatively to develop incentives for reducing tobacco use among workers.

The workplace is a prime location for promoting tobacco cessation because of the structured setting and the group support that can be generated around such activities. When employers and labor organizations encourage workers to quit smoking or using smokeless tobacco, they gain a healthier workforce, improved worker morale, increased productivity, and an enhanced public image.

A 1987 report prepared for the State of Michigan estimated the potential cost savings to be gained through risk reduction activities in the workplace. The report concluded that employers who sponsor smoking cessation programs realize a return on their investment that is greater than the potential return from any other risk reduction activity.

Financial incentives are perhaps the most common way in which employers encourage their employees to quit using tobacco products. Examples of such incentives include: inplant cessation programs that are offered to employees at no cost or low cost; employer-subsidized fees for off-site programs; employer/union negotiated insurance coverage for cessation programs (including nicotine-replacement therapies); and bonuses for employees who successfully quit using tobacco.

Through the Michigan Health Initiative, the Michigan Department of Public Health offers grants to small businesses for health promotion activities in their workplaces. Since smoking is the single risk factor related to the greatest number of fatal and debilitating diseases, employers should be encouraged by the Michigan Department of Public Health to use these grants for tobacco cessation programs.

Additionally, insurers could offer financial incentives to their subscribers who do not smoke. Nonsmokers who purchase life or property and casualty insurance often receive reduced premiums rates, based upon their potential for longer life spans and reduced risk of home accidents and fires.

Health insurers could follow this lead and offer reduced premium rates for nonsmokers based upon potentially lower use of health care services. Efforts would need to be made to

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educate the public that such nonsmoker "discounts" were available. As an initial step in this direction, the health insurance industry should begin to collect the data needed to determine the cost-effectiveness of tobacco cessation services.

Such financial incentives from employers and insurers can encourage smokers to quit and not return to the habit.

G. Clearinghouse services in Michigan should be coordinated, strengthened, and expanded so all state residents have better access to the information they need to effectively use tobacco cessation services. Clearinghouse services should be publicized throughout the state.

To effectively use tobacco cessation services, Michigan residents must first know that such services exist and how to locate them. Clearinghouses serve the purpose of compiling information about available resources and making this information available to the general public.

For example, the Michigan Department of Public Health operates a tobacco "hotline", providing information about cessation. The Cancer Information Service, operated by the Meyer L. Prentis Comprehensive Cancer Center of Metropolitan Detroit, is another clearinghouse which provides information and education about tobacco and resources for cessation. The major voluntary health associations also often serve such a function.

Currently, clearinghouses do not always have the most upto-date information about the wide range of local cessation services available throughout Michigan. A concerted effort must be made, therefore, to survey existing local tobacco cessation services and to keep this information as accurate as possible. The Michigan Department of Public Health should play a major role in the statewide coordination of this activity.

Clearinghouses should be publicized heavily throughout the state, including through such means as "Yellow Pages" listings in all community telephone directories, local public libraries, media spots, etc.

## IV. More vigorous efforts must be made to instill a tobacco-free lifestyle in the Michigan population.

Since the 1964 publication of the first U.S. Surgeon General's report linking smoking and health effects, Americans' attitudes toward smoking and other forms of tobacco use have been changing. Surveys indicate that the public is becoming more aware of the health risks of tobacco, and is increasingly less accepting of tobacco use. Public policy is beginning to recognize nonsmoking as the norm. The private sector—including airlines, restaurants, and other businesses serving the public—also is beginning to follow suit.

Public support is an essential element in any plan to reduce the use of cigarettes, smokeless tobacco, and other tobacco products in Michigan. Public policy and private efforts should reinforce the norms of a tobacco-free lifestyle in adults and children in the state.

Therefore, the Task Force recommends that:

A. The Michigan Department of Public Health should expand its ongoing anti-tobacco media campaign, supplementing funds from the Michigan Health Initiative with other resources.

In June 1989, the Michigan Department of Public Health launched a media campaign, funded through the Michigan Health Initiative (MHI), to promote strong antitobacco messages through television, billboards, and posters.

Because tobacco use is a major risk factor for many fatal diseases, the Department's media campaign should continue to discourage smoking and should add messages that address the dangers of smokeless tobacco use. Other monies, such as tobacco excise tax revenues, should be found to supplement MHI funds and expand antitobacco advertising efforts in the state.

In order to make the best use of resources and to avoid duplication of services, the State should coordinate its anti-tobacco media efforts with the major statewide voluntary health agencies, such as the American Lung Association, the American Heart Association, and the American Cancer Society. These

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agencies have high-quality media materials available, many of which are aimed at populations that are at high risk for tobacco use and the related disease and mortality.

The Department's current media campaign is directed at two high-risk groups, children and women, with an emphasis on Black women. The campaign should be expanded to address other groups that are believed to have higher-than-average rates of tobacco use, and in some cases, to be at higher risk for smoking-related disease. Such groups include those without a college education, minorities, and low-income persons.

In order to reach all Michigan residents, the media campaign should include ethnically and culturally sensitive and diverse materials. Materials should be prepared in languages other than English, particularly Spanish and Arabic. Furthermore, these materials should be distributed through media that reach ethnic and non-English speaking populations in the state, such as cable television channels, community publications, or specialized radio programs. All television commercials produced for the campaign should include closed-caption formatting for the hearing-impaired.

The Department's media campaign also should inform individuals of Michigan's tobacco control laws, and of their rights and responsibilities under these laws. For example, media messages could be used to educate people about the Michigan Clean Indoor Air Act and how to report violations of this act, and about the Youth Tobacco Act and how to enhance enforcement of this law.

- B. School-based antitobacco education programs should be strengthened.
  - 1. The State should continue to expand implementation of the Michigan Model for Comprehensive School Health Education, enhancing tobacco education components in the early elementary grades and increasing information provided about the dangerous and addictive nature of smokeless tobacco. A commitment to long-term evaluation

of the Michigan Model must be maintained.

2. The Smoke-Free Class of 2000 Project—
jointly sponsored by the American
Cancer Society, the American Heart
Association, and the American Lung
Association—is consistent with the
objectives of the Michigan Model for
Comprehensive School Health Education
and should be implemented in all
schools throughout Michigan.

The classroom setting should be used to reinforce the norms of a tobacco-free lifestyle. One way this is being done is through the Michigan Model for Comprehensive School Health Education, a curriculum which is currently in place for grades kindergarten through eight in three-quarters of Michigan school districts. The Model includes lessons on the dangers of tobacco products and helps children develop the skills and attitudes to resist tobacco use.

The Michigan Model should be implemented in all school districts in the state. Because children are experimenting with cigarettes and smokeless tobacco at early ages, additional lessons on tobacco use must be included for early elementary grades. The Michigan Model curriculum should be expanded to include more material on the dangers of smokeless tobacco, since surveys indicate that its use is increasing among boys.

The Michigan Model includes a long-term evaluation component that will gauge the ability of the curriculum to influence students' health behaviors. But, because of state budgetary constraints, funding for this evaluation component was cut from the Fiscal Year 1990 Michigan state budget. Since the evaluation component is a critical part of the Michigan Model's efforts, this funding should be reinstated.

Other efforts to reinforce a tobacco-free lifestyle among today's children are underway in Michigan schools. The American Cancer Society, the American Heart Association, and the American Lung Association have joined together in a major promotional campaign to eliminate the use of tobacco among

young people during the next 10 years. This project—called "The Smoke-free Class of 2000"—has objectives that are consistent with those of the Michigan Model and should be implemented in schools throughout the state.

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# C. All K-12 school buildings, school grounds, and student transport vehicles should be tobacco-free.

Under the Michigan Clean Indoor Air Act, smoking in schools is confined to designated smoking areas, generally staff lounges. If smoking is permitted at any time within school buildings, the health of children and adults may be put at risk by tobacco smoke distributed through ventilation systems from designated smoking areas to classrooms and other areas where students and school personnel spend considerable time each day.

Furthermore, children learn from the examples set by adults. Because children are aware that teachers and other role models are smoking behind closed doors, the anti-tobacco messages they receive in the classroom are weakened.

All K-12 schools should be tobacco-free, meaning no tobacco use by school personnel, students, or visitors, at any time, in school buildings, on school grounds, and in student transport vehicles. The National Education Association has recently passed a resolution supporting tobacco-free schools. The states of Kansas, Washington, and New Jersey have accomplished this by enacting laws requiring schools to be tobacco-free. Other possible methods include the collective bargaining process and incentive programs such as the tobacco-free school campaign mounted in Minnesota.

#### D. The use and sale of tobacco products should be prohibited in health care facilities.

Under the 1988 amendments to the Michigan Clean Indoor Air Act, smoking in most health facilities, including private practice offices of health professionals, is prohibited in patient care areas and in areas shared by smokers and non-smokers. Smoking in other areas may be permitted if ventilation systems

exhaust these areas directly. Long-term care facilities are regulated by different smoking statutes than acute care facilities. This poses problems for institutions which house both types of facilities. Such differences also contribute to confusion about the applicable policy.

In addition, the use and sale of tobacco products in health care facilities sends a conflicting message about the importance of avoiding tobacco use. Simply restricting smoking and tobacco use to designated areas of a health care facility implies that these behaviors are condoned by the health professionals working there.

In order to send a consistent message about the health dangers of tobacco use, and to avoid confusion over regulations, the sale and use of tobacco products should be prohibited in all health care facilities in Michigan. Examples of tobacco-free policies can be found at Kalkaska Memorial Health Center in Kalkaska, Northern Michigan Hospitals in Petoskey, and other hospitals across the state.

E. The State of Michigan should be prohibited by law from manufacturing, selling, or promoting tobacco products, and from profiting from investments in firms that manufacture tobacco products. This includes activities in prisons, statesupported institutions of higher education, and facilities owned or leased by the State.

Since the passage of the Michigan Clean Indoor Air Act, nonsmoking has been recognized as the norm in buildings owned or operated by the State. In addition, the State invests resources in reducing tobacco use among Michigan residents and in treating the health consequences of tobacco use. Thus, it is illogical and contradictory for the State to support and encourage the use of tobacco products by allowing their manufacture, sale, or promotion under its authority.

For instance, the sale of cigarettes is common in state university buildings. Some college students are under the age of 18 and cannot purchase tobacco products legally. Yet, they and other students may be encouraged to use these products

because of their accessibility and the social acceptability implied by their on-campus sale.

Residents of Michigan's correctional system manufacture cigarettes which are then sold to other prisons, both within and outside the state. Cigarettes also are routinely sold in State office buildings and other State-owned facilities. In addition, the State of Michigan currently invests State pension funds in tobacco companies.

The use of cigarettes in state mental health facilities also raises concerns because of the health and fire hazards associated with their use.

Because the manufacture, sale, and promotion of tobacco products by the State of Michigan is harmful to its residents and contradicts other State policies and priorities, the State should not engage in such practices or allow them in facilities owned or leased by the State.

### F. All meetings covered by the Michigan Open Meetings Act should be smoke-free.

In accordance with Michigan's Open Meetings Act, all meetings of public bodies are open to the public. When these meetings are held in public buildings, the Michigan Clean Indoor Air Act requires that smoking be confined to designated smoking areas, in order to protect the general public from the dangers and annoyances of environmental tobacco smoke.

At many public meetings, the designated smoking area is part of the open room in which all participants are seated. While this designation technically complies with the law, it does not achieve the purpose of the law, since persons who want to participate in such meetings are involuntarily exposed to tobacco smoke pollutants in the air.

State and local officials should uphold nonsmoking as the norm and protect the health of the public by declaring that all meetings covered by the Michigan Open Meetings Act be tobacco-free, whether held in public or private facilities.

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V. The Michigan Congressional Delegation should support strengthened federal antitobacco policies and programs. Michigan's U.S. Senators and Representatives should be urged to introduce or support legislation consistent with the intent of this report, including the following:

A. Federal tobacco excise taxes should be substantially increased, using a percentage tax system for all products. Revenues from these taxes should be returned to the states and to the federal Office on Smoking and Health to support health activities, including efforts in tobacco use prevention, cessation, and protection.

The federal government imposes an excise tax of 16 cents on a pack of cigarettes, and less than 2 cents on the average size container of snuff and chewing tobacco. These taxes have not been raised since the mid-1980s. Such relatively low taxes do not have a noticeable impact on tobacco users' decisions to buy tobacco products.

For taxes to be used as an effective deterrent to tobacco use, especially among youth, they must be set at significantly high levels. To this end, an aggressive state tobacco excise tax policy should be implemented. Such a strategy would be even more effective when supplemented by significant increases in federal excise taxes on tobacco products. Therefore, the Michigan Congressional Delegation should promote legislation to substantially increase federal tobacco excise taxes. The increased taxes should be based upon a percentage of wholesale price in order to retain the deterrent effect as prices increase over time.

The revenues that would result from increased federal tobacco excise taxes should be shared with the states to support health activities and also should be used to expand the capacity of the federal Office on Smoking and Health.

B. Federal funding should be made available for large, ongoing antitobacco media campaigns managed by the states and coordinated with the antitobacco media campaigns of voluntary agencies.

Publicity surrounding the 25th anniversary of the first U.S. Surgeon General's report on the health consequences of smoking has stimulated public interest in tobacco-related issues and created an environment in which more people are questioning the use of tobacco products. This coincides with the national drive against the misuse of drugs and alcohol. A well-planned antitobacco media campaign could capitalize on these trends and help reduce tobacco-related disease and death in our country.

Some states, such as Michigan, already are undertaking the process of warning their citizens about the dangers of tobacco use. These states are fortunate enough to have the resources and political climates that allow them to present strong antitobacco media messages. But, in order to maintain and expand such efforts, more resources are needed. Federal funding, possibly gained from increased federal tobacco excise taxes, should be channelled through the states for strong and sustained antitobacco media campaigns.

C. The Federal Communications Commission should require the broadcast media to make free air time available for antitobacco public service messages as a condition of licensing.

Experience gained during the period when the Fairness Doctrine was applied to cigarette advertising indicates that antitobacco public service announcements are effective in reducing the use of tobacco products. Analyses have shown that antismoking messages broadcast during this time had a greater impact on smoking behavior than cigarette advertisements, in spite of the fact that the antitobacco campaign was greatly outspent by tobacco industry efforts.

Since the deregulation of the broadcasting industry, there has been a decline in the amount of air time donated for public

service announcements. Consequently, health advocates have been forced to dip further into scarce public funding to purchase broadcast media time. These purchases of air time are expensive, particularly when spots are purchased during the hours when antitobacco messages have the greatest chance of reaching target audiences.

To help ensure that the public is fully informed about the need to avoid cigarettes and other forms of tobacco, the federal government should require that television and radio stations donate a specified amount of air time to antitobacco public service messages as a condition of their broadcast licenses. A portion of this donated public service time should be during prime time hours.

D. The U.S. Food and Drug Administration should be given jurisdiction over regulation of tobacco and other nicotine-bearing products, including the regulation of false and misleading advertising of these products.

Traditionally, the federal government has regulated consumer products for the purpose of protecting the health and safety of U.S. citizens. Although this approach has been used extensively for a host of other products, statutory and administrative exceptions have been made for the tobacco industry. As a result, tobacco products, with rare exceptions in the areas of labeling and advertising, have not been regulated, despite the fact that they are potentially more dangerous than many of the commodities currently monitored.

The U.S. Food and Drug Administration, the agency that would logically have jurisdiction over tobacco products, does not regulate them except when medical claims are made about the products. In fact, cigarettes, smokeless tobacco, and other tobacco products have been excluded from coverage under virtually all the health and safety laws passed by the U.S. Congress since 1964.

Since tobacco is known to be a hazardous substance, both for those who use it and for those who are exposed to its smoke, it should be regulated by the U.S. Food and Drug Administration. This jurisdiction should include the ability to

restrict tobacco product advertising that contains false or misleading claims.

### E. Smoking should be banned on all interstate public conveyances.

Since 1988, federal legislation has banned smoking on all regularly scheduled domestic airline flights of two hours or less. Beginning in February 1990, all domestic airline flights of six hours or less will be smoke-free.

Similar actions should be taken for bus and train transportation. Currently, federal legislation restricts smoking to the rear 30 percent of seats on interstate buses, exposing nonsmoking passengers and drivers to tobacco smoke in an enclosed vehicle. Federal restrictions on smoking in train cars were repealed with the formation of the AMTRAK corporation. AMTRAK itself now limits smoking on its trains to designated smoking cars, but passengers and crew still may have to walk through these cars to reach dining cars and other areas of the trains.

The Michigan Congressional Delegation should promote legislation or regulations requiring smoke-free travel on interstate buses and trains.

F. The following messages should be added to the rotating U.S. Surgeon General warnings on appropriate tobacco packages and advertising: "Warning: Smoking is addictive;" "Warning: Chewing tobacco is addictive;" and "Warning: Use of snuff is addictive."

In 1965, Congress mandated that cigarette packages carry a simple health warning to consumers. Since then, the requirements have been broadened to include strengthened rotating warnings on cigarette and smokeless tobacco packages and tobacco advertisements.

Unfortunately, these improved health warnings do not address the reality that tobacco products are addictive, a fact that is not understood by a great number of young people and

adults. Warnings about the addictive nature of tobacco products could influence potential or current tobacco users in making decisions regarding smoking or the use of smokeless tobacco.

Therefore, the Michigan Congressional Delegation should work to amend the 1984 Comprehensive Smoking Education Act and the Comprehensive Smokeless Tobacco Education Act of 1986 to add the warnings about addiction to tobacco packages and advertisements.

# G. The use, or threat, of trade sanctions intended to encourage the export of U.S. tobacco products to foreign markets should be opposed.

As the U.S. market for tobacco shrinks due to increasing public awareness of the health hazards associated with tobacco use, U.S. tobacco manufacturers have maintained profits by forcing entry into foreign markets. In 1987 alone, U.S. tobacco exports increased a staggering 56 percent. This export boom has been facilitated by the use, or threat, of trade sanctions against countries that attempt to restrict sales of U.S. tobacco products within their borders.

Such intimidation tactics raise ethical concerns. On the one hand, federal health agencies are actively fighting to reduce the use of tobacco products in this country. On the other hand, federal trade agencies encourage the export of these same hazardous products to the people of other nations. It also is hypocritical for the United States to attempt to control drug traffic into this country from other parts of the world while assisting U.S. tobacco companies in their efforts to promote and sell a dangerous addictive drug on foreign shores.

The United States government should not use, or threaten to use, trade sanctions to open foreign markets to U.S. tobacco exports.

H. Federal law should require that all combustible tobacco products manufactured or sold in the United States meet strong fire safety standards.

In the United States, more fatal fires are started by smoking materials than by any other source. In 1986, smoking materials ignited more than 45,000 residential fires across the country, resulting in 1,415 deaths and significant property losses.

These tragic results might have been avoided if cigarettes manufactured in the United States were required to meet fire safety standards. The tobacco industry has actively opposed attempts to impose such standards, however, in spite of expert findings that it is technologically possible to produce self-extinguishing cigarettes with a lower potential for starting fires.

A strong federal policy for the fire safety of all combustible tobacco products manufactured in this country would ensure that uniform standards exist for all states. Therefore, the Michigan Congressional Delegation should work to establish such a policy. Tobacco industry attempts to delay or weaken this legislation should be resisted.

 Medicare coverage for tobacco cessation services and medically approved nicotinereplacement therapies should be established.

Tobacco cessation programs and therapies should be available to all tobacco users, regardless of their ability to pay. For many individuals who use tobacco, the price of these services seems quite reasonable. But, for many elderly and disabled persons on Social Security, finding the extra money to pay for a cessation program or nicotine-replacement therapy is difficult at best.

Health care costs of persons on Social Security are usually paid for by Medicare, the federal health insurance program for elderly and disabled Americans. But, like most private insurers, Medicare does not help pay for tobacco cessation programs or nicotine-replacement therapies. This omission exists in spite of the fact that smoking is a major risk factor for heart disease,

cancer, and other fatal diseases and that the health consequences of tobacco use are cumulative, increasing with years of smoking.

In order to make cessation services financially accessible to many elderly and disabled tobacco users, Congress should act to require Medicare coverage for nicotine-replacement therapies and for tobacco cessation services which meet at least minimum criteria for quality and effectiveness.

# J. All forms of advertising and promotion of cigarettes, smokeless tobacco, and other tobacco products should be prohibited.

The purpose of advertising is to present the product in a way that will appeal to consumers. Today's advertisers typically do not rely upon strictly factual information to sell their products. Instead, they use images that tie the products to feelings or activities that make potential customers feel good, whether or not those images have anything to do with the item being marketed. Advertisements for tobacco products—the most heavily advertised commodity in the U.S.—exemplify this approach to selling.

Children and adolescents are particularly susceptible to these glorified advertising images. Tobacco manufacturers take great pains to depict their products—and the people who use them—as sexy, fun, and healthy. Target audiences are encouraged to think of tobacco use as an adult activity that can make the user more socially acceptable. Although the tobacco industry denies that it targets advertising toward young people, tobacco advertisements continue to appear in publications with a high youth readership.

The tobacco industry's promotional activities also portray tobacco use as an easy path to the glamours of adulthood. The names of tobacco products are associated with race cars, rock stars, box office hits, and other people and events that appeal to children and adolescents. Role models of smokers are seen in movies and on television, often with the brand name of the product clearly displayed on a package or a sign. Given these promotional tactics, it is not surprising that most tobacco users start the habit as youngsters.

Because federal law allows the states only a limited ability to regulate tobacco advertising, action must be taken on the federal level. In order to reduce the attractiveness of tobacco products to minors (for whom the use of tobacco is illegal in many states), to remove the visual cues that help stimulate former tobacco users to return to the habit, and to eliminate subtle, misleading messages about the social and personal benefits of using tobacco products, all forms of advertising and promotion of tobacco products should be prohibited. The Michigan Congressional Delegation should work toward that end.

# K. The federal income tax deduction for advertising of tobacco products should be eliminated.

Like other businesses, tobacco manufacturers enjoy a corporate income tax deduction for expenses related to advertising and promotion of their products. Because of the tobacco industry's use of this deduction, the federal government loses more than \$1 billion in tax revenues each year.

The federal government should not subsidize the advertising or promotion of tobacco products. Such a subsidy works at cross purposes to federal programs to reduce the prevalence of tobacco use in the United States. Furthermore, the revenues lost through this tax deduction could be used to offset the economic burdens that tobacco use places upon society.

The Michigan Congressional Delegation should support the elimination of this tax deduction for the tobacco industry. As an option, Congress could make this tax deduction available only to those tobacco companies that also pay for media messages detailing the negative health effects of tobacco use.

### L. Federal price supports for U.S. tobacco growers should be discontinued.

The demand for U.S. tobacco has declined considerably in recent years due to decreased consumption of tobacco products by Americans, the development of manufacturing processes that require less tobacco per cigarette, and increased use of foreign.

tobacco in products manufactured in this country. Tobacco farmers in the United States have survived these changes in demand fairly well, in part because tobacco is one of the six farm crops grown under a federal price support and supply control program. Under this system, farmers agree to limit their production in exchange for a guaranteed buyer and a guaranteed minimum price.

The federal price support system has resulted in a huge surplus of tobacco in the United States. According to the U.S. Department of Health and Human Services, at the end of 1985, federal loans covering these surplus stocks stood at \$3.5 billion, with a projected loss to the U.S. taxpayers of \$1 billion.

The federal government must cease sending a mixed message on tobacco use. It is counterproductive to spend resources to reduce tobacco use and its harmful consequences while at the same time providing financial support to tobacco growers. Such conflicting actions waste needed resources and imply approval of dangerous tobacco products.

The Michigan Congressional Delegation should work to eliminate this conflict by ending the federal program of price supports and supply control for tobacco in the United States.

### M. The federal preemption of state regulation of tobacco advertising should be repealed.

The Public Health Cigarette Smoking Act of 1969 prevents states and localities from regulating cigarette advertising and promotion for health-related reasons. This preemption was justified as a means of avoiding conflicting state or local laws in this area. However, the effect of the preemption clause has been to give the tobacco industry a relatively unbridled ability to advertise and promote dangerous tobacco products.

State legislators, and especially local policy-makers, are often in a good position to enact strong legislation and ordinances relative to tobacco because they face less political pressure from the tobacco interests than do members of Congress. The Michigan Congressional Delegation could be instrumental in allowing states wider discretion in regulating or prohibiting tobacco advertising and promotion by amending the Public Health Cigarette Smoking Act of 1969 to remove the federal preemption on such action.

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#### VI. All organizations and individuals concerned with the health of Michigan's citizens must share responsibility for helping implement the recommendations of this Task Force.

The consequences of tobacco use are shared by all Michigan citizens, whether or not they are tobacco users. Each year, more than 16,000 state residents die prematurely and thousands more become disabled from tobacco-related disease, resulting in suffering and hardship to friends, family, and co-workers. Tobacco smoke in public places harms and annoys smokers and nonsmokers alike. The economic costs of tobacco use drain the public treasury and tap private pocketbooks.

Responsibility for reducing the health consequences and economic impact of tobacco use must be shared by all institutions, groups, and individuals in Michigan concerned about the health and safety of our society.

Therefore, the Task Force recommends that:

A. Members of the Task Force and other state and local organizations should identify and act upon recommendations that require their unique abilities, interest, and influence for effective implementation.

The members of the Michigan Tobacco Reduction Task Force represent a broad range of public and private agencies and organizations interested in reducing the use of tobacco products in Michigan. These members were chosen, in part, because of their ability to bring about action within the constituencies that they represent. As the work of the Task Force is completed, these members take with them the responsibility of furthering the plan that was developed during this effort.

To effectively implement the recommendations of the Task Force, it is necessary to broaden the pool of groups and individuals who will champion the fight against smoking and the use of smokeless tobacco.

Voluntary organizations, education groups, professional societies, local public health departments. community

antitobacco coalitions, and other community groups should recognize the roles they can play in reducing tobacco use in Michigan. Leaders of these groups should study the Task Force report and identify recommendations that can be priorities in their own health promotion activities.

B. The Michigan Department of Public Health should coordinate efforts to implement the recommendations of the Task Force and should prepare periodic progress reports on their implementation.

Groups and individuals who are interested in helping realize the goal of a tobacco-free Michigan should have access to information and support from an agency responsible for coordinating the implementation of the Task Force recommendations. This responsibility should rest with the Michigan Department of Public Health, an agency that not only is charged with protecting the health of Michigan citizens, but that also has the capacity to work effectively on a statewide basis.

As coordinator of these efforts, the Department should prepare periodic reports on the progress toward implementation of the Task Force recommendations. Such a requirement creates accountability among the agencies and groups working to carry out these recommendations, and builds awareness and interest among policy-makers and the public. At a minimum, these reports should be distributed to the Governor, the Michigan Legislature, the Michigan Congressional Delegation, the Michigan Risk Reduction and AIDS Policy Commission, and the Michigan Chronic Disease Advisory Committee, and also be made available to the general public.

C. The Michigan Department of Public Health should work with the Michigan Coalition on Smoking OR Health and other state or local groups to help strengthen public and private political advocacy efforts needed to implement the recommendations of the Task Force.

Many of the Task Force recommendations require legislative action at the federal, state, or local level. Convincing policy-makers of the need for tobacco control actions will require considerable effort. The task will be made more difficult by the political strength of the well-funded and influential tobacco lobby, which is on record as vigorously opposing nearly all tobacco control efforts.

Previous legislative successes on clean indoor air policies, restrictions on sales to minors, and other tobacco issues in Michigan indicate that policy-makers are interested in protecting the public from the hazards of tobacco use. However, only coordinated action on the part of the Michigan Department of Public Health, the Michigan Coalition on Smoking OR Health, and other groups such as local antitobacco coalitions will develop the political strength that is needed to convince policy-makers to approve strong and comprehensive tobacco control measures.

## D. The Michigan Department of Public Health should expand its grant program for the development of local community antitobacco coalitions.

The Michigan Department of Public Health has awarded nine grants to create antitobacco coalitions in Michigan communities. Almost half of all Michigan counties are covered by one of these coalitions. The coalitions' activities are varied, and include both health education and policy initiatives.

For instance, several northern Michigan counties working under a coalition grant are considering passage of local ordinances to ban vending machine sales of tobacco products. The Marquette County Tobacco or Health Community Coalition has sponsored "Go for the Gold" contests, in which area smokers have been encouraged to join others across the nation in quitting during the American Cancer Society's "Great American Smokeout." Individuals who could certify that they remained smoke-free during this day-long challenge were eligible to win a gold pendant. Contest publicity fueled public enthusiasm and support for smokers trying to quit.

Other examples of projects that have been or could be implemented by such coalitions include a children's anti-

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tobacco poster contest and an "adopt a smoker" lottery, in which individuals who support smokers' efforts to quit are eligible for cash prizes.

Local coalitions are ideally suited to help carry out the Task Force recommendations, particularly those that call for local planning and action. To facilitate implementation of the recommendations, as well as other antitobacco actions on the local level, the Michigan Department of Public Health should expand the funding and scope of its grant program for community antitobacco coalitions, allowing all areas of the state to form such groups and benefit from these efforts.

E. The Michigan Department of Public Health and the Michigan Division of the American Cancer Society, with the cooperation of other state and local agencies, should apply for an ASSIST/2000 grant from the National Cancer Institute. This grant should be used to implement the recommendations of the Task Force and further other Michigan-based tobacco control efforts.

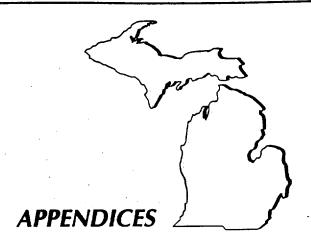
To be successful, implementation of the Task Force recommendations will require substantial organizational and financial resources. Because the budgets of participating organizations are limited, additional sources of funding must be sought to ensure that these important efforts are not put aside for lack of money.

One possible source of help is the ASSIST/2000 grant program administered by the National Cancer Institute. The ASSIST (American Stop Smoking Intervention Study) grants will fund community-based coalitions capable of coordinating tobacco control plans. Each recipient may be awarded more than \$5 million, to be used over a seven-year planning and implementation period.

The Michigan Department of Public Health, in conjunction with the Michigan Division of the American Cancer Society, should apply for an ASSIST/2000 grant to help with implementation of these recommendations and other tobacco

use reduction activities. The proposal should be designed to enhance the ability of existing advocacy groups, voluntary agencies, and local public health departments to reduce smoking and smokeless tobacco use.

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#### APPENDIX A

### PATTERNS OF TOBACCO USE: DETAILED DATA

Table 1. ANNUAL MICHIGAN PER CAPITA CIGARETTE CONSUMPTION, ADULTS AGED 18 YEARS AND OLDER, 1983-1987

Year	Annual per capita consumption	Percent change from previous year
1983	3,494	
1984	3,499	+0.14%
1985	3,494	-0.14
1986	3,417	-2.25
1987	3,382	-1.02

SOURCE: Michigan Department of Public Health, Center for Health Promotion, Division of Research and Development. Information derived using sales data supplied by the Michigan Department of Treasury, Bureau of Revenue, Motor Fuel, Cigarette and Miscellaneous Taxes Division (Lansing, MI), and population data supplied by the Michigan Department of Public Health, Office of the State Registrar and Center for Health Statistics, Data Users Service Unit (Lansing, MI).

Table 2. ANNUAL U.S. PER CAPITA CIGARETTE CONSUMPTION, ADULTS AGED 18 YEARS AND OLDER, 1964-1987

Year	Annual per capita consumption	Percent change from previous year
1964	4,195	-3.5%
1965	4,259	+1.5
1966	4,287	+0.7
1967	4,280	-0.2
1968	4,186	-2.2
1969	3,993	<del>-4</del> .6
1970	3,985	-0.2
1971	4,037	+1.3
1972	4,043	+0.1
1973	4,148	+3.0
1974	4,141	-0.2
1975	4,123	-0.4
1976	4,092	-0.8
1977	4,051	-1.0
1978	3,967	-2.1
1979	3,861	<b>-2.7</b> °
1980	3,851	-0.3
1981	3,840	-0.3
1982	3,753	-2.3
1983	3,502	-6.7
1984	3,461	-1.2
1985	3,370	-2.6
1986	3,274	-2.8
1987 (est.)	3,196	-2.4

SOURCE: U.S. Department of Agriculture. *Tobacco Situation and Outlook Report*. (Washington, DC: USDA, Economic Research Service, TS-204, June 1988.)

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Table 3. TRENDS IN U.S. CIGARETTE SMOKING PREVALENCE, ADULTS AGED 20 YEARS AND OLDER, 1965-1987

Year	Smoking prevalence among U.S. adults*
40/5	40.404
1965	40.4%
1966	40.7
1970	37.0
1974	36.9
1976	36.1
1977	35.6
1978	34.0
1979	33.5
1980	33.3
1983	31.8
1985	30.4
1987 (estimated)	29.1
Trend information	(1965-1985):
% change per ye	ar -0.50%
standard error	±0.03
$\mathbb{R}^{2}$	0.97

<sup>\*</sup> Data adjusted to the 1985 age distribution of the U.S. population

Table 4. TRENDS IN THE U.S. SMOKING QUIT RATIO, ADULTS AGED 20 YEARS AND OLDER, 1965-1987

Year	Quit Ratio
1965	29.6%
1966	29.5
1970	35.3
1974	36.3
1976	37.1
1977	36.8
1978	38.5
1979	39.0
1980	<b>3</b> 9.0
1983	41.8
1985	45.0
1987 (estimated)	44.8
Trend information (1965	-1985):
% change per year	+0.68%
standard error	±0.05
R <sup>2</sup>	0.95

	former smokers
* Quit ratio =	
	current smokers + former smokers

Table 5. TRENDS IN U.S. SMOKING PREVALENCE BY GENDER, ADULTS AGED 20 YEARS AND OLDER, 1965-1987

Year	Males*	Females'
		•
1965	50.2%	31.9%
1966	50.8	32.0
1970	44.3	30.8
1974	43.4	31.4
1976	42.1	31.3
1977	40.9	31.4
1978	39.0	29.6
1979	38.4	29.2
1980	38.5	29.0
1983	35.5	28.7
1985	33.2	28.0
1987 (estimated)	31.7	26.8
Trend information (190	55-1985):	
% change per year	-0.84%	-0:21%
standard error	±0.04	±0.03
R <sup>2</sup>	0.98	0.81

<sup>\*</sup> Data adjusted to the 1985 age distribution of the U.S. population

Table 6. MICHIGAN SMOKING PREVALENCE BY GENDER, ADULTS AGED 18 YEARS AND OLDER, 1982 AND 1987

Year	Males	Females
1982	36.0%	29.6%
1987	28.4	29.4

SOURCES: Data for 1982 are from Holmes, R.E., Harding, S.H., Lafkas, G.A., Eyster, J.T., and DeGuire, P.J. *Michigan Opinion: Behavioral Risk Factors*. (Lansing, MI: Michigan Department of Public Health, 1983.) Data for 1987 are from Mayer, J.M. Thrush, J., Chan, V., and Mills, E.M. *Health Risk Behaviors: 1987*. (Lansing, MI: Michigan Department of Public Health, February 1988.)

Table 7. TRENDS IN U.S. CIGARETTE SMOKING QUIT RATIO BY GENDER, ADULTS AGED 20 YEARS AND OLDER, 1965-1987

Year	Males	Females
1065	31.4%	24.6%
1965 1966	31.4	24.0%
	37.9	29.2
1970	39.3	30.8
1974	39.9	32.1
1976 1977	40.3	31.3
1977	41.3	33.8
1979	41.5	34.0
1980	41.5	34.0
1983	44.1	37.6
1985	49.0	40.0
1987 (estimated)	48.7	40.1
Trend Information (190	65-1985):	
% change per year	+0.73%	+0.73%
standard error	±0.06	±0.05
R <sup>2</sup>	0.94	0.96

Table 8. MICHIGAN SMOKING QUIT RATIO BY GENDER, ADULTS AGED 18 AND OLDER, 1982 AND 1987

Year	Males	Females
1982	46.7%	36.9%
1987	50.0	37.3

SOURCE: Michigan Department of Public Health, Center for Health Promotion, Division of Research and Development, using Michigan-specific BRFS data. Data for 1982 are from Holmes, R.E., Harding, S.H., Lafkas, G.A., Eyster, J.T., and DeGuire, P.J. *Michigan Opinion: Behavioral Risk Factors*. (Lansing, MI: Michigan Department of Public Health, 1983.) Data for 1987 are from Mayer, J.M., Thrush, J., Chan, V., and Mills, E.M. *Health Risk Behaviors: 1987*. (Lansing, MI: Michigan Department of Public Health, February 1988.)

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Table 9. TRENDS IN U.S. SMOKING PREVALENCE BY RACE, ADULTS AGED 20 YEARS AND OLDER, 1965-1987

Year	Whites	Blacks
1965	40.0%	43.0%
1966	40.4	42.9
1970	36.5	41.4
1974	36.1	44.0
1976	35.6	41.2
1977	34.9	41.8
1978	33.6	38.2
1979	33.2	36.8
1980	32.9	37.2
1983	31.4	36.6
1985	29.9	36.0
1987 (estimated)	28.8	34.0
Trend Information (196	65-1985):	
% change per year	-0.50%	-0:39
standard error	±0.03	±0.08
R <sup>2</sup>	0.97	0.74

Table 10. MICHIGAN SMOKING PREVALENCE BY RACE, ADULTS AGED 18 YEARS AND OLDER, 1982 and 1987

Year	Whites	Blacks
1982	33.1%	27.6%
1987	28.3	34.8

SOURCES: Data for 1982 are from Holmes, R.E., Harding, S.H., Lafkas, G.A., Eyster, J.T., and DeGuire, P.J. *Michigan Opinion: Behavioral Risk Factors*. (Lansing, MI: Michigan Department of Public Health, 1983.) Data for 1987 are from Mayer, J.M., Thrush, J., Chan, V., and Mills, E.M. *Health Risk Behaviors: 1987*. (Lansing, MI: Michigan Department of Public Health, February 1988.)

Table 11. TRENDS IN U.S. SMOKING QUIT RATIO BY RACE, ADULTS AGED 20 YEARS AND OLDER, 1965-1987

Year	Whites	Blacks
1965	30.5%	22.8%
1966	30.4	22.6
1970	36.7	23.2
1974	38.0	21.8
1976	38.4	26.3
1977	38.2	24.8
1978	39.9	275
1979	40.3	28.0
1980	40.4	<b>27.7</b>
1983	43.3	29.3
1985	46.7	31.8
1987 (estimated)	46.4	31.5
Trend information (19)	65-1985):	
% change per year	+0.72%	+0.43%
standard error	±0.06	±0.07
R <sup>2</sup>	0.94	0.82

Table 12. TRENDS IN U.S. SMOKING PREVALENCE BY EDUCATIONAL LEVEL, ADULTS AGED 20 YEARS AND OLDER, 1966-1987

Year	Less than nigh school graduate	High school graduate	Some college	College graduate
1966	36.5%	41.1%	42.5%	33.7%
1970	34.8	38.3	36.7	28.1
1974	36.5	37.6	36.9	28.3
1976	35.8	37.8	36.4	27.4
1977	35.8	38.4	35.2	25.6
1978	35.3	36.5	32.7	<b>23.8</b> °
1979	34.9	35.4	33.3	23.4
1980	35.5	35.7	31.2	24.6
1983	34.7	35.6	30.0	19.9
1985	35.7	34.2	28.1	18.4
1987 (est.	35.7	33.1	26.1	16.3
Trend info	ormation (1960 ge/	5-1985):		
year standar	-0.06%	-0.32%	-0.70%	-0.76%
error	±0.03	±0.05	±0.07	±0.08
R <sup>2</sup>	NA*	0.87	0.94	0.93

<sup>\*</sup> The slope of the regression line was not significantly different from zero, making the R<sup>2</sup> computation inappropriate.

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Table 13. TRENDS IN U.S. SMOKING QUIT RATIO BY EDUCATIONAL LEVEL, ADULTS AGED 20 YEARS AND OLDER, 1966-1987

	Less than high school graduate	High school graduate	Some college	College graduate
1966	33.3%	28.0%	28.7%	39.7%
1970	38.1	33.6	34.9	48.2
1974	38.0	35.2	36.6	47.9
1976	39.5	35.0	37.2	46.1
1977	38.3	34.0	36.8	48.6
1978	38.7	36.3	41.0	49.7
1979	40.8	36.7	37.5	50.6
1980	39.4	36.5	40.6	48.7
1983	42.1	38.7	41.2	54.9
1985	41.3	40.5	46.0	61.1
1987 (est.)	39.7	40.9	46.9	61.4
Trend info	ormation (1966 ge/	5-1985):		
year standard	+0.41% i	+0.57	+0.73%	+0.85%
error	±0.06	±0.07	±0.10	±0.16
R <sup>2</sup>	0.85	0.89	0.88	0.78

Table 14. SMOKING PREVALENCE OF U.S. HIGH SCHOOL SENIORS, 1975-1987

Year	Daily smokers	Less than daily smokers	Previous smokers, not in last month	Never smokers
1975	27 %	10 %	37%	26%
1976	29	10	36	25
1977	29	10	38	24
1978	28	9	38	25
1979	26	9.	40	26
1980	21	9	41	29
1981	20	9.	42	29
1982	21	9	40	30
1983	20	9	41	29
1984	18	11	41	30
1985	19	11	39	31
1986	18	11	38	32
198-	19	11	38	33

SOURCE: Johnston, L.D., O'Malley, P.M., and Bachman, J.G. National Trends in Drug Use and Related Factors Among High School Students and Young Adults, 1975-1986. (Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. [ADM] 87-1535, 1987.)

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Table 15. U.S. SMOKING PREVALENCE BY EDUCATIONAL LEVEL AND GENDER, ADULTS AGED 20 to 24 YEARS OLD, 1965-1987

);

		High school graduate or less		At least some college	
Year	Overall population	Male	Female	Male	Female
1965	47.8%	63.6%	42.6%	42.7%	34.5%
<b>196</b> 6	47.7	65.1	41.3	43.5	34.7
1970	41.5	60.0	40.2	33.2	26.8
1974	39.5	52.7	40.1	34.7	26.4
1976	39.6	54.1	41.0	34.4	23.0
1977	38.8	52.2	43.0	24.0	27.5
1978	35.4	46.8	39.3	25.9	21.1
1979	35.8	47.1	41.9	23.8	22.1
1980	36.1	50.1	40.3	20.1	19.4
1983	36.9	49.1	45.5	16.2	22.9
1985	31.8	43.0	43.6	15.5	17.2
1987 (	est.) 29.5	43.8	37.6	16.3	15.1
	information (1	965-1985):			
ye	ar -0.69% dard	-1.00%	+0.10%	-1.51%	-0.72%
er	ror ±0.09	±0.13	±0.10	±0.13	±0.15
R <sup>2</sup>	0.86	0.87	NA*	0.95	0.75

 $<sup>^{\</sup>circ}$  The slope of the regression line was not significantly different from zero, making the  $R^2$  computation inappropriate.

SOURCE: U.S. Department of Health and Human Services, National Center for Health Statistics, Division of Health Interview Statistics: Data from the National Health Interview Surveys (Atlanta, GA). (Data computed by the Division of Epidemiology and Health Promotion from data compiled by the Division of Health Interview Statistics.)

#### APPENDIX B

## STANDARD ERRORS FOR MICHIGAN BRFS SMOKING PREVALENCE DATA

Standard errors of the computed percentages included in Chapter 2 are presented below. Exact standard error values for 1982 are not available, but ranges for these standard errors are included in the table. Standard errors for quit ratios are not available.

Population Group	1982	1987	
Current Smokers	not available	± 2.07	
Former Smokers	not available	± 1.92	
Never Smokers	not available	± 2.28	
10 or Fewer Cigarettes	not available	± 2.03	
11-19 Cigarettes	not available	± 1.59	
20 Cigarettes	not available	± 2.18	
21-30 Cigarettes	not available	± 1.57	
30 or More Cigarettes	not available	± 1.40	
Michigan Females	± 1.8-1.9	± 2.96	
Michigan Males	± 1.9-2.2	± 2.90	
Michigan Blacks	± 3.5-4.9	± 7.02	
Michigan Whites	± 1.4-1.6	± 2.20	
Less than High School			
Graduate	± 2.7-3.2	± 5.15	
High School Graduate	± 2.0-2.4	± 3.31	
Some College	± 2.8-3.5	± 4.12	
College Graduate	± 3.0-3.7	± 4.38	
Less than \$10,000	not available	+ 5.57	
\$10,000-\$19,000	not available	+ 4.82	
\$20,000-\$35,000	not available	+ 3.87	
Greater than \$35,000	not available	+ 4.15	
18-24 Year Olds	± 3.2-3.8	± 4.27	

#### APPENDIX C

# SIGN USED IN MASSACHUSETTS TO WARN AGAINST THE SALE OF TOBACCO PRODUCTS TO MINORS

### Sale of Cigarettes (or any tobacco product)



## to persons under age 18 is illegal

Whoever sells a cigarette, chewing tobacco, snuff or any tobacco in any of its forms to any person under the age of eighteen or, not being his parent or guardian, gives a cigarette, chewing tobacco, snuff or tobacco in any of its forms to any person under the age of eighteen shall be punished by a fine of not less than one hundred dollars for the first offense, not less than two hundred dollars for a second offense and not less than three hundred dollars for any third or subsequent offense.

#### APPENDIX D

#### **MODEL CLEAN INDOOR AIR ACT\***

Sec. 1. Title

This Act shall be known as the Clean Indoor Air Act.

#### Sec. 2. Findings and Purpose

The legislature hereby finds:

Numerous studies have found that tobacco smoke is a major contributor to indoor air pollution; and

Reliable studies have shown that breathing secondhand smoke is a cause of disease, including lung cancer, in healthy nonsmokers. At special risk are elderly people, individuals with cardiovascular disease, and individuals with impaired respiratory function, including asthmatics and those with obstructive airway disease; and

Numerous studies have shown that the majority of both nonsmokers and smokers desire to have restrictions on smoking in public places and places of employment; and

Smoking is a potential cause of fires, and cigarette and cigar burns and ash stains on merchandise and fixtures which cause losses to businesses.

Accordingly, the legislature finds and declares that the purposes of this Act are (1) to protect the public health and welfare by prohibiting smoking in public places except in designated smoking areas, and by regulating smoking in places of employment; and (2) to strike a reasonable balance between the needs of persons who smoke and the right of nonsmokers to breathe smokefree air, and to recognize that the right to breathe smokefree air shall take priority.

<sup>\*</sup> This model Act was written by: Americans for Nonsmokers' Rights, 2054 University Avenue, #500. Berkeley: CA: 94704:

#### Sec. 3. Definitions

The following words and phrases, when used in this Act, shall be construed as defined in this section:

- 1. "Bar" means an area which is devoted to the serving of alcoholic beverages for consumption by guests on the premises and in which the service of food is only incidental to the consumption of such beverages. Although a restaurant may contain a bar, the term "bar" shall not include the restaurant dining area.
- 2. "Business" means any sole proprietorship, partnership, corporation or other business entity formed for profit-making purposes, including retail establishments as well as professional corporations and other entities where legal, medical, or other professional services are delivered.
- 3. "Dining Area" means any enclosed area containing a counter or tables upon which meals are served.
- "Employee" means any person who is employed by any employer in the consideration for direct or indirect monetary wages or profit, and any person who volunteers his or her services to a non-profit entity.
- "Employer" means any person, partnership, corporation, including a municipal corporation, or non-profit entity, who employs the services of one or more individual persons.
- 6. "Enclosed Area" means all space between a floor and ceiling which is enclosed on all sides by solid walls or windows (exclusive of door or passageways).
- 7. "Non-Profit Entity" means any corporation, unincorporated association or other entity created for charitable, educations, or other similar purposes. A public agency is not a "non-profit entity" within the meaning of this section.

- 8. "Place of Employment" means any enclosed area under the control of a public or private employer which employees normally frequent during the course of employment, including, but not limited to, work areas, employee lounges and restrooms, conference rooms, and hallways.
  - a. A private residence is not a "place of employment" unless it is used as a child care or health care facility.
  - b. The dining area of a restaurant is not a "place of employment".
- 9. "Public Place" means any enclosed area to which the public is invited or in which the public is permitted, including but not limited to, banks, health care facilities, public transportation facilities, reception areas, restaurants, retail food production and marketing establishments, retail service establishments, retail stores, theatres and waiting rooms.
- 10. "Restaurant" means any coffee chop, cafeteria, private and public school cafeteria or eating establishment, and any other eating establishment which gives or offers for sale food to the public, patrons or employees, except that the term "restaurant" shall not include a cocktail lounge or tavern if said cocktail lounge or tavern is a "bar" as defined in section 3(1).
- 11. "Retail Tobacco Store" means a retail store utilized primarily for the sale of tobacco products and accessories and in which the sale of other products is merely incidental.
- 12. "Service Line" means any indoor line at which one (1) or more persons are waiting for or receiving service of any kind.
- 13. "Smoking" means inhaling, exhaling, burning or carrying any lighted cigar, cigarette, or other combustible substance in any manner or in any form.

14. "Sports Arena" means sports pavilions, gymnasiums, health spas, swimming pools, roller and ice rinks, bowling alleys and other similar places where members of the general public assemble either to engage in physical exercise, participate in athletic competition or witness sports events.

#### Sec. 4. Application of Article to State-Owned Facilities

All enclosed facilities owned by the State of , shall be subject to the provisions of this Act.

#### Sec. 5. Prohibition of Smoking in Public Places

- A. Smoking shall be prohibited in all enclosed public places within the State of including, but not limited to, the following places, and with the following exceptions:
  - 1. Elevators.
  - 2. Buses, taxicabs, and other means of public transit, and ticket, boarding, and waiting areas of public transit depots.
  - 3. Restrooms.
  - 4. Service lines.
  - 5. Retail stores, except areas in said stores not open to the public and all areas within retail tobacco stores.
  - All areas available to and customarily used by the general public in all businesses and non-profit entities patronized by the public.
  - 7. Restaurants, provided, however, that this prohibition does not prevent (a) designation of a contiguous area within a restaurant that contains a maximum of fifty percent (50%) of the seating capacity of the restaurant as a smoking area, or (b) providing separate rooms for smokers and nonsmokers, so long as the rooms designated for

- smoking do not contain more than fifty percent (50%) of the seating capacity of the restaurant.
- 8. Public areas of aquariums, galleries, libraries and museums when open to the public; provided, however, that this prohibition does not prevent the designation of a separate room for smoking in such areas.
- Any building not open to the sky which is primarily used for exhibiting motion picture, stage, musical recital or other performance, except when smoking is part of a stage production.
- 10. Sports arenas and convention halls, except in designated smoking areas.
- 11. Every place of meeting or public assembly, including school buildings under the control of any board, commission, committee, or agencies of the State during such time as a public meeting is in progress.
- 12. Waiting rooms, hallways, wards and semiprivate rooms of health facilities, including, but not limited to, hospitals, clinics, physical therapy facilities, doctors' offices, and dentists' offices.
- 13. Polling places.
- B. Notwithstanding any other provision of this section, any owner, operator, manager or other person in control of a facility described in this section may declare that entire facility as a nonsmoking area.

#### Sec. 6. Regulation of Smoking in Places of Employment

A. It shall be the responsibility of employers to provide smoke-free areas for nonsmoking employees within existing facilities to the maximum extent possible, but employers are not required to incur any expense to make physical modifications in providing these areas.

- B. Within 90 days of the effective date of this Act, each employer having an enclosed place of employment shall adopt, implement, make known and maintain a written smoking policy which shall contain at a minimum the following requirements:
  - 1. Any employee in a place of employment shall have the right to designate his or her work area as a nonsmoking area and to post the same with an appropriate sign or signs, to be provided by the employer. If, due to the proximity of smokers, size of the work area, poor ventilation or other factors, such designation does not reduce the effects of smoke to the satisfaction of the employee, the employer shall make additional accommodation by expanding the size of the work area subject to the prohibition against smoking or implementing other measures reasonably designed to eliminate the effects of smoke on the employee.
  - 2. Smoking shall be prohibited in all common work areas in a place of employment, unless every person who works in that area agrees in writing that a smoking area will be designated.
  - Prohibition of smoking in auditoriums, classrooms, conference and meeting rooms, elevators, hallways, medical facilities and restrooms.
  - 4. Provision and maintenance of separate and contiguous nonsmoking areas of not less than fifty percent (50%) of the seating capacity and floor space in cafeterias, lunchrooms, and employee lounges or provision and maintenance of separate and equal sized cafeterias, lunchrooms, and employee lounges for smokers and nonsmokers.
  - In any dispute arising under the smoking policy, the health concerns of the nonsmokers shall be given precedence.
- C. The smoking policy shall be communicated to all employees within three (3) weeks of its adoption.

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- D. All employers shall supply a written copy of the smoking policy upon request to any existing or prospective employee.
- E. Notwithstanding any other provision of this section, every employer shall have the right to designate any place of employment, or any portion thereof, as a nonsmoking area.

#### Sec. 7. Where Smoking Not Regulated

- A. Notwithstanding any other provision of this Act, the following areas shall not be subject to the smoking restrictions of this Act:
  - 1. Bars.
  - 2. Private residences, except when used as a child care or health care facility.
  - 3. Hotel and motel rooms rented to guests.
  - 4. Retail tobacco stores.
  - Restaurants, hotel and motel conference or meeting rooms, and public and private assembly rooms while these places are being used for private functions.
  - 6. A private enclosed office workplace occupied exclusively by smokers.
- B. Notwithstanding any other provision of this section, any owner, operator, manager or other person who controls any establishment described in this section may declare that entire establishment as a nonsmoking establishment.

#### Sec. 8. Posting of Signs

A. "Smoking" or "No Smoking" signs, whichever are appropriate, with letters of not less than one inch (1") in height or the international "No Smoking" Symbol (consisting of a pictorial representation of a burning cigarette enclosed in a red circle with a red bar across it) shall be clearly and conspicuously posted in every

building or other place where smoking is regulated by this Act by the owner, operator, manager or other person having control of such building or other place.

- B. Every theatre owner, manager or operator shall conspicuously post signs in the lobby stating that smoking is prohibited within the theatre or auditorium.
- C. Every restaurant shall have posted at every entrance a conspicuous sign clearly stating that a nonsmoking section is available, and every patron shall be asked as to his or her preference.

#### Sec. 9. Enforcement

- A. Enforcement of this Act shall be implemented by the Department of Health.
- B. Any citizen who desires to register a complaint under this chapter may initiate enforcement with the Department of Health.
- C. Any owner, manager, operator or employee of any establishment regulated by this Act may inform persons violating this Act of the appropriate provisions thereof.
- D. Notwithstanding any other provision of this Act, a private citizen may bring legal action to enforce this Act.

#### Sec. 10. Violations and Penalties

- A. It shall be unlawful for any person who owns, operates or otherwise controls any premises subject to regulation under this Act to fail to comply with any of its provisions.
- B. It shall be unlawful for any person to smoke in any area where smoking is prohibited by the provisions of this Act
- C. Any person who violates any provision of this Act shall be guilty of an infraction, punishable by:

- 1. A fine not exceeding one hundred dollars (\$100.00) for a first violation.
- 2. A fine not exceeding two hundred dollars (\$200.00) for a second violation of this Act within one (1) year.
- 3. A fine not exceeding five hundred dollars (\$500.00) for each additional violation of this Act within one (1) year.

#### Sec. 11. Nonretaliation

No person or employer shall disci. ge, refuse to hire or in any manner retaliate against any employee or applicant for employment because such employee or applicant exercises any rights afforded by this Act.

#### Sec. 12. Other Applicable Laws

This Act shall not be interpreted or construed to permit smoking where it is otherwise restricted by other applicable laws.

#### Sec. 13. Local Ordinances

This Act does not prohibit any political subdivision of the State from adopting a more stringent ordinance that regulates or prohibits smoking in the workplace, public places, or restaurants.

#### Sec. 14. Severability

If any provision, clause, sentence or paragraph of this Act or the application thereof to any persons or circumstances shall be held invalid, such invalidity shall not affect the other provisions of this Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are declared to be severable.

#### Sec. 15. Effective Date

This Act shall be effective thirty (30) days from and after the date of its adoption.